Software User Manual for iW-G15 WinCE

iW-PRDVZ-UM-01-R1.0-REL1.0-WinCE7.0

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WinCE User Manual for

iW-i.MX6Q-Rainbow-G15

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1. Introduction

1.1. Purpose and Scope

The purpose of the document is to guide you how to use the iW-G15 development platform.

1.2. Glossary

Acronyms	Description.
BSP	Board Support Package
DHCP	Dynamic Host Control Protocol
ENET	Ethernet

FEC	Fast Ethernet Controller
GB	Giga Byte
HID	Human Interface Device
IP	Internet Protocol
IPU	Image Processing Unit
KITL	Kernel Independent Transport Layer
LCD	Liquid Crystal Display
MAC	Media Access Control
MMC	Multi Media Card
MSI	Microsoft Software Installer
OAL	OEM Abstraction Layer
OS	Operating System
OTG	On The Go
PC	Personal Computer
RAM	Random Access Memory
SATA	Serial Advanced Technology Attachment
SD	Secure Digital
USB	Universal Serial Bus
VGA	Video Graphics Array
WinCE 7.0	Windows Embedded Compact 7.0

1.3. References

- Linux User Manual

file://server/prdvz/svn/trunk/iW-PRDVZ-PF-01-R1.0/iW-PRDVZ-SF-01-R1.0/iW-PRDVZ-UM-01-R1.0/iW-PRDVZ-UM-01-R1.0-RELx.yz-Linux/iW-PRDVZ-UM-01-R1.0-REL1.0-Linux/iW- PRDVZ-UM-01-R1.0-REL1.0-Linux.doc

2. Power on Sequence for G15 Platform

2.1 Host Requirements

To see the booting of WinCE 7.0 on an iW-RainboW-G15 board, the host machine must meet the following requirements:

- A host PC (Windows).
- An available serial port on your Development Host.

2.2 Target Requirements

To boot iW-RainboW-G15 Board using micro SD, Following Items are required:

- iW-RainboW-G15 board.
- 12V Power Supply
- RS232 Serial Cable
- Micro SD.

Note: The above mentioned items are part of the iWave deliverables.

2.3 Power ON procedure

- The iW-RainboW-G15 Platform can be powered ON using external power supply .Refer the Section 2.23.1 in Generic Q7 Carrier_HardwareUserGuidel_REL_1.0.doc document provided along with iWave Deliverables.
- Insert one end of the serial cable to PC/Laptop serial connector and connect other end to the G15 Platform serial port. Refer the Section 2.4.1 in Generic Q7 Carrier_HardwareUserGuidel_REL_1.0.doc document provided along with iWave Deliverables.
- Insert micro SD card (if it is not inserted) with iW-RainboW-G15 images to micro SD slot in iW-RainboW-G15 board. Refer the Section 2.3 in Generic Q7 Carrier_HardwareUserGuidel_REL_1.0.doc document provided along with iWave Deliverables.
- Open the HyperTerminal on PC/Laptop with following settings (use COM1 or COM2).

  Baud rate: 115200 bps
  Data bits: 8
  Parity: none
  Stop bits: 1
  Flow control: none

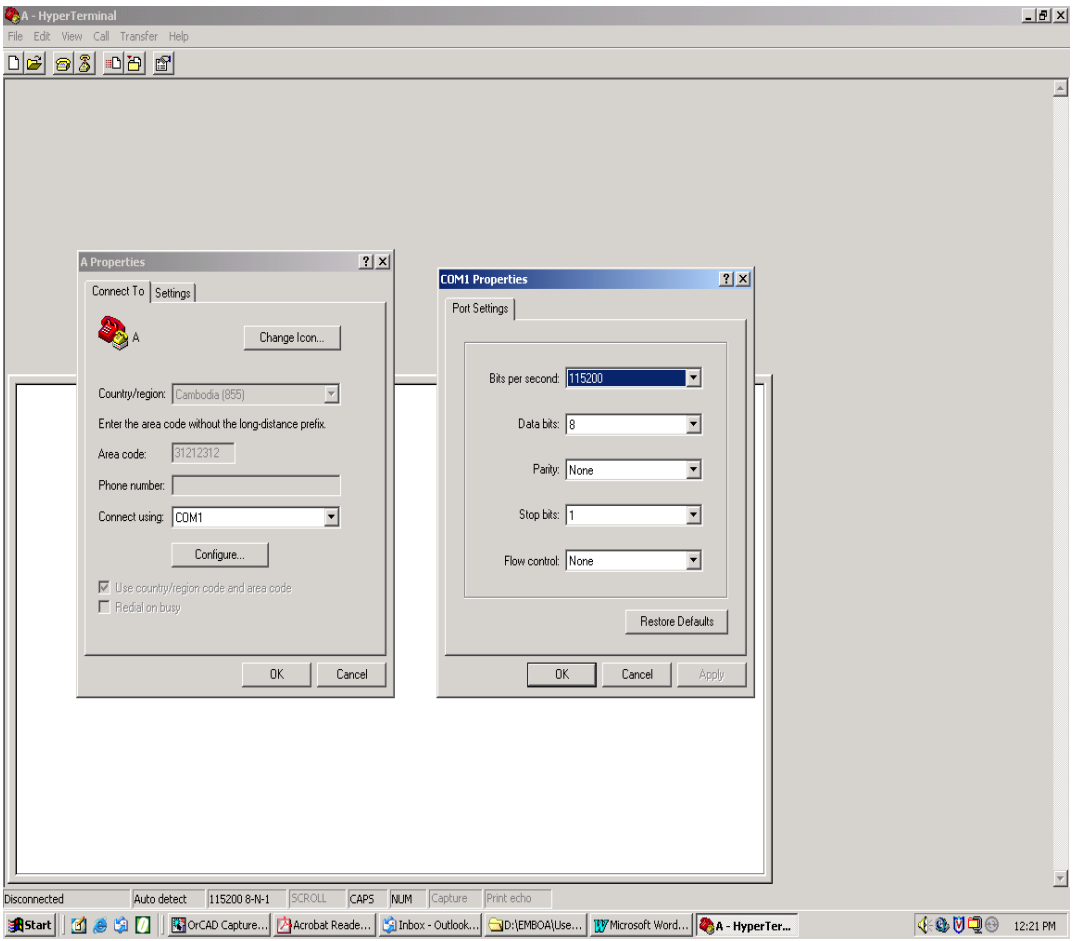

Figure 1: HyperTerminal Settings

- Click on “Restore Defaults” and continue with setting with the baud rate.
- Now Click Configure button and do Port Settings as below.

Bits per Second (Baud Rate)	:**115200**
Data bits	:**8**
Parity	:**None**
Stop Bits	:**1**
Flow Control	:**None**

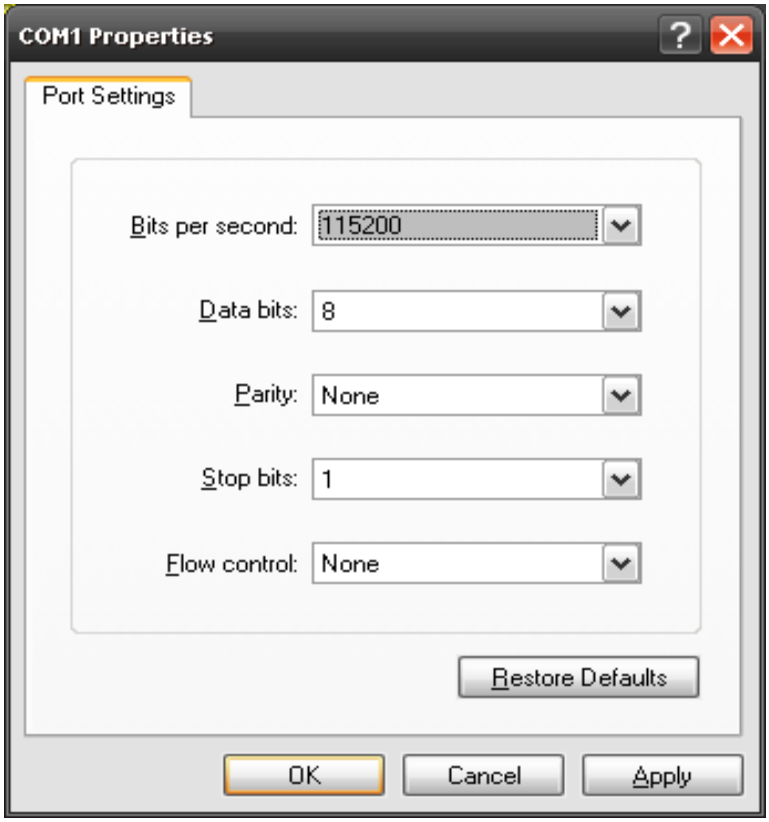

Figure 2: HyperTerminal Settings (contd)

- Just click “Apply” and then “OK”.

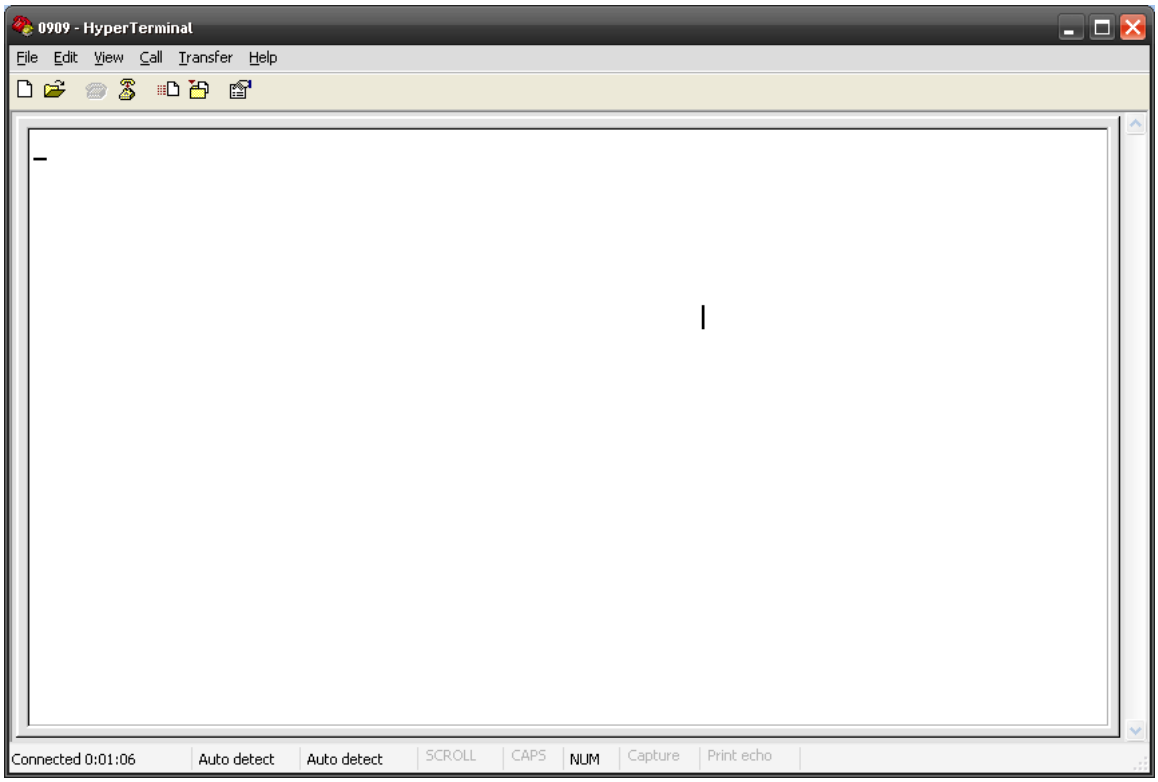

Figure 3: Hyper Terminal screen after settings

- Switch ON the power supply for target board.
- WinCE 7.0 would boot.

3. Peripheral Testing

3.1. Display driver

This section explains about the display test in iW-G15 board after booting WinCE 7.0.

Procedure

1) Power on iW-G15 platform.
2) Boot the WinCE7.0.
3) The WinCE 7.0 image will be displayed on the screen as follows. If it does not boot refer section 5.5 to make boot configuration settings.

Figure 4:Windows CE image screen

3.2. 1GB RAM

This Section explains 1GB RAM identification in WinCE 7.0

Procedure

1) Power on iW-G15 board.
2) Boot WinCE 7.0 through SD/MMC.
3) Go to Start → Settings → Control Panel → System → Memory

1GB = NK.bin Size + Storage Memory + Program Memory + ARGS & IPU

For Example:

Storage Memory	→	123552 Kilo Bytes
Program Memory	→	863900 Kilo Bytes
		---
		927 MB (Appro)

NK.nb0	→	94 MB (Appro.)
ARGS, IPU	→	3 MB (Appro)

		1024 MB

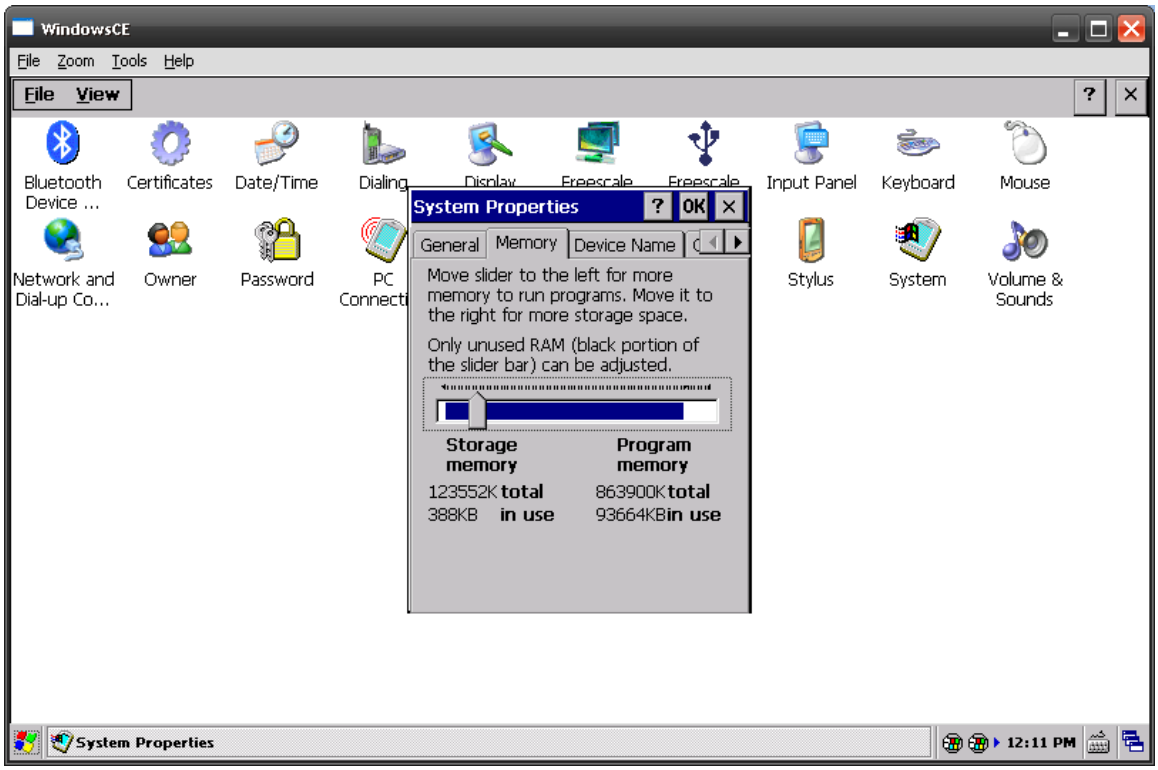

Figure 5: System memory

3.3. USB Host

This section explains about using USB mass storage.

Procedure

1) Power on iW-G15.
2) Boot WinCE7.0 through SD/MMC Card.
3) Insert USB memory stick to the USB Host port.
4) Check “Hard Disk” Folder available in the “My Device” Folder.

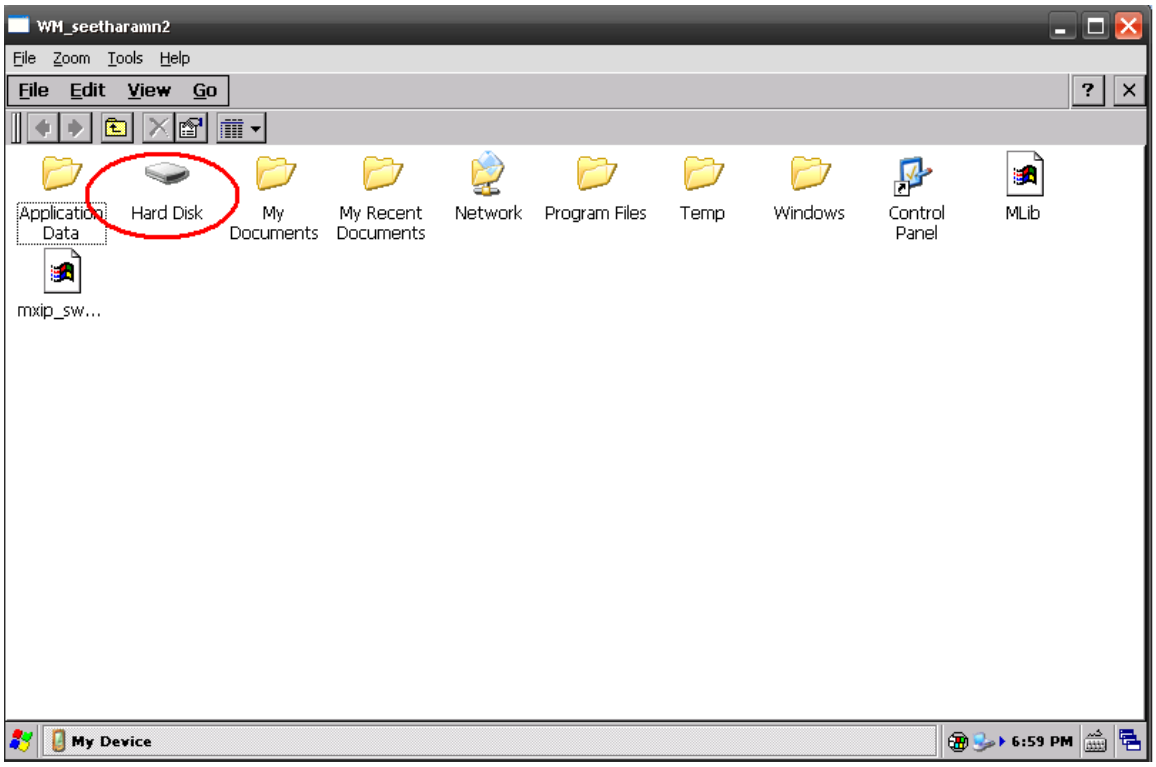

Figure 6: USB hard disk

5) "Hard Disk" icon is shown as and Not as .

6) Size of the memory stick is shown as approximately 3.7GB in "Storage Manager Control Panel Applet" (In this example Inserted the 4GB USB Memory stick).

3.4. USB Mouse and Keyboard Support

To check the USB HID class functionality using USB US Layout keyboard and USB Mouse in WinCE 7.0 on iW-G15 platform.

Procedure

1) Power on iW-G15 platform.
2) Boot WinCE7.0 through SD/MMC card.
3) Insert the USB Keyboard and USB Mouse in the USB slots.

4) The following snap shots show the working of USB mouse.

Figure 7: USB Mouse working

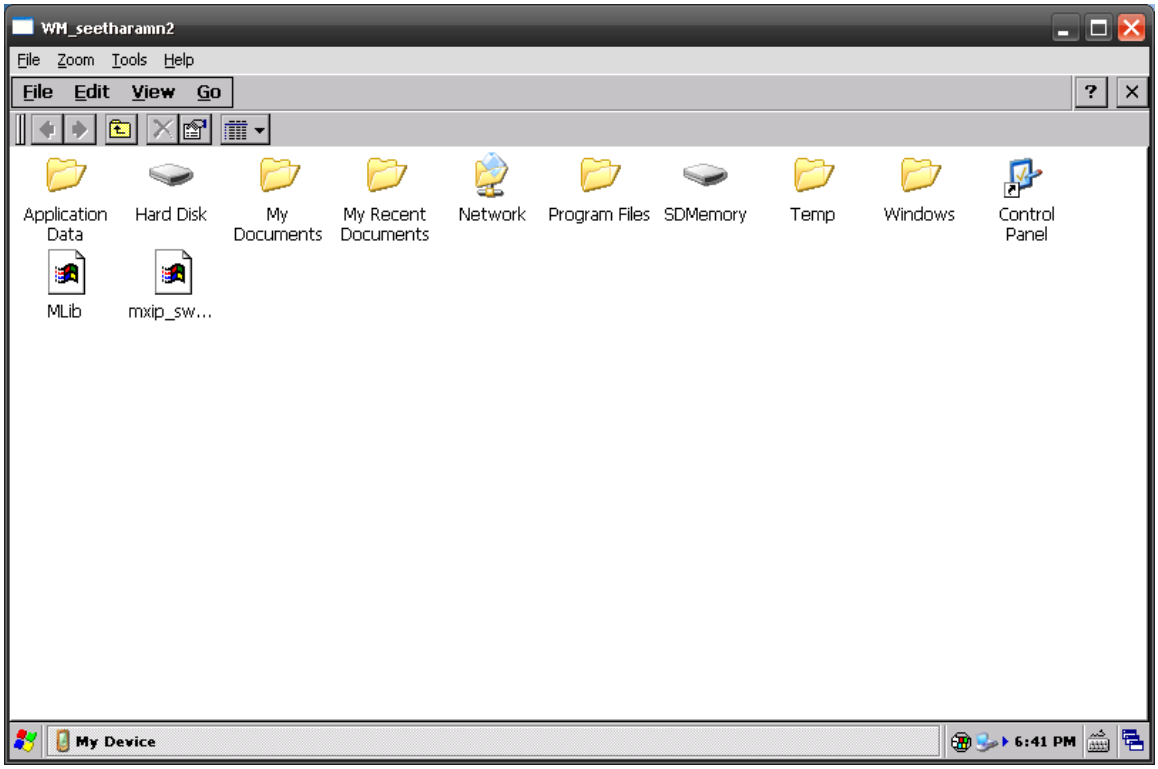

Figure 8: Mouse double click working

5) Double click on the “Microsoft wordpad” present on Desktop to open the wordpad. Type in it using the keyboard connected.

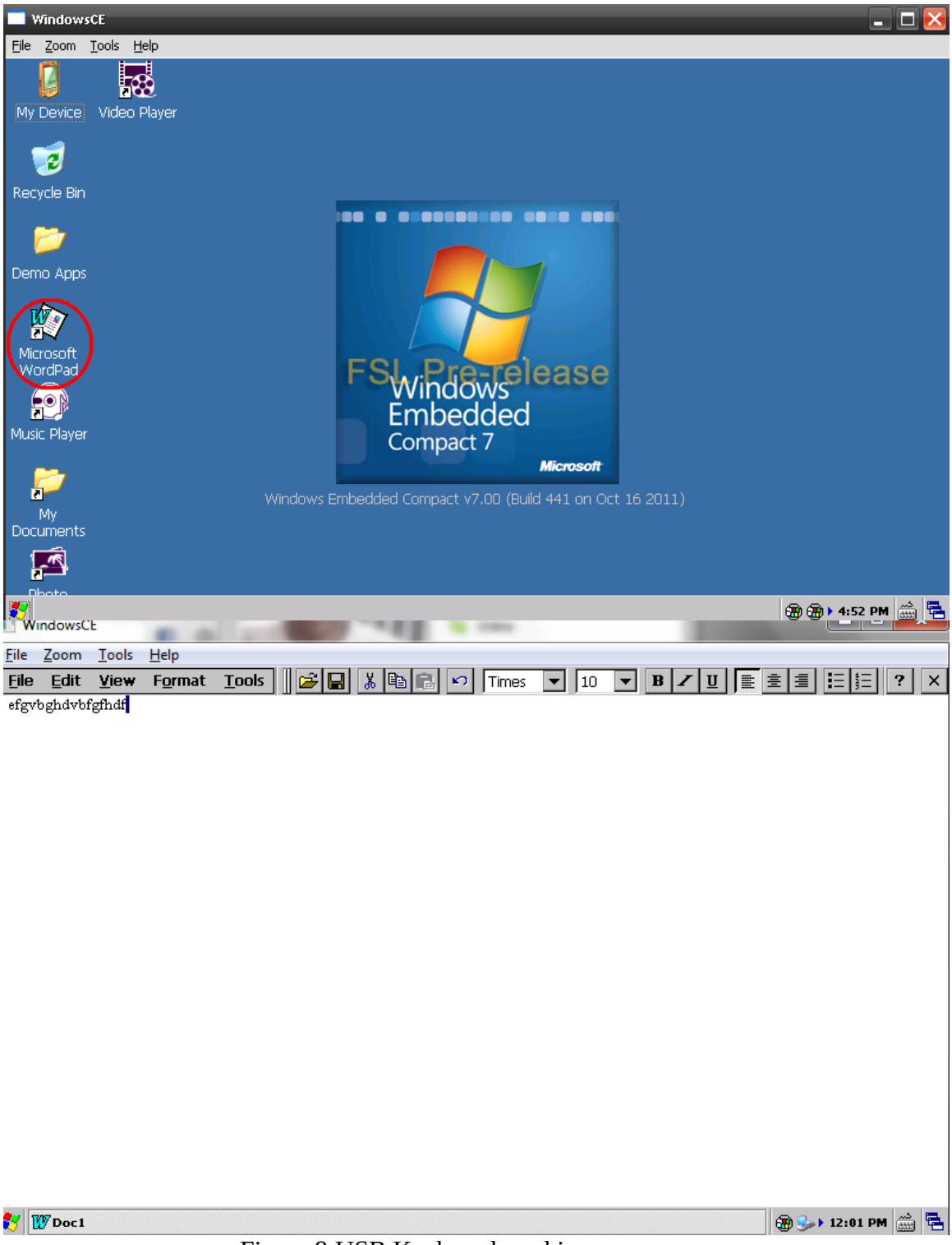

Figure 9:USB Keyboard working

3.5. SD/MMC card

This section explains about using SD/MMC card.

Procedure

1) Power on iW-G15 platform.
2) Boot WinCE7.0.
3) Insert the SD card in to the SD slot of the G15M Platform.
4) "SDMemory" folder available in the "My Device" Folder.
5) Double click on the "SDMemory" icon to open it.

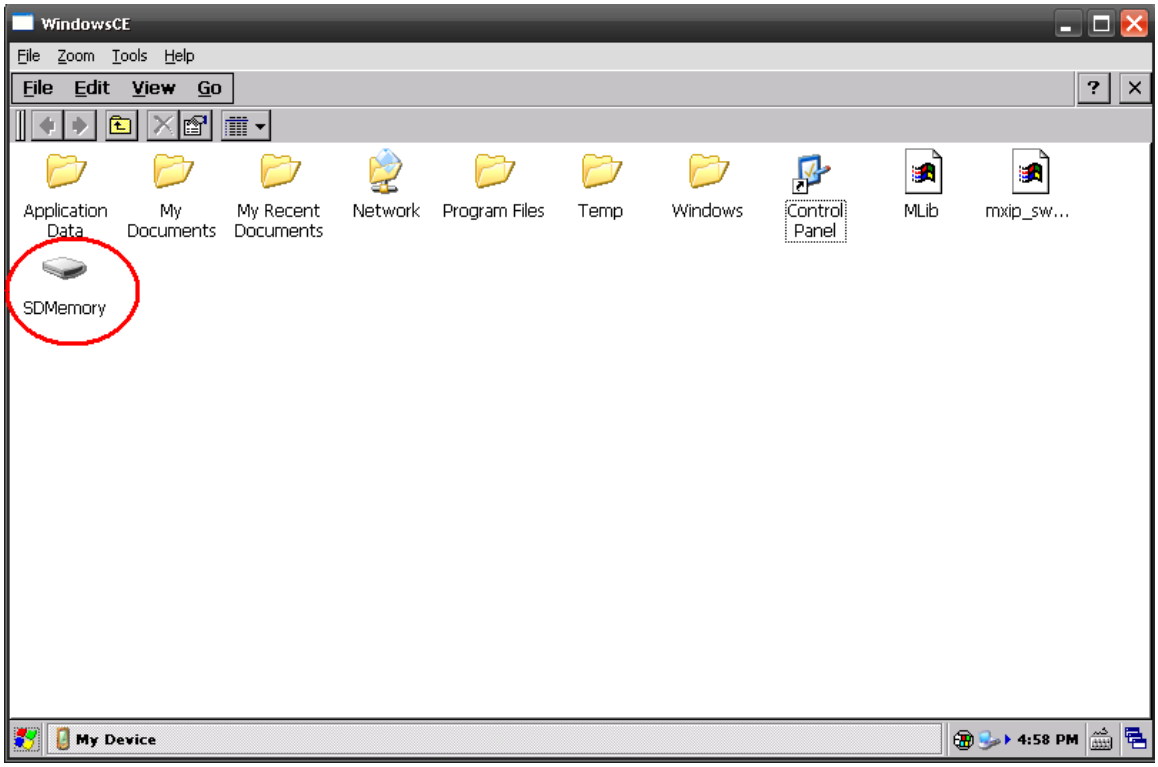

Figure 10: SDMemory detection

6) "SDMemory" icon is shown as and Not as .
7) Size of the SD/MMC is approximately near to the size of the card inserted.

3.6. USB OTG

This section explains about using USB OTG to connect to the PC using ActiveSync.

Using this we can copy files from/to the Desktop PC to the G15M Platform.

Procedure

1) Power on iW-G15 board.
2) Boot WinCE7.0.
3) Before Connecting USB OTG from Desktop PC to G15M Platform, Make sure Active sync has installed in the Desktop PC, If not installed then use the below link to download and install the Active Sync in the Desktop PC.
   For Windows XP: http://www.microsoft.com/download/en/details.aspx?id=15
   For Windows Vista: http://www.microsoft.com/download/en/details.aspx?id=14
   For Windows 7: http://www.microsoft.com/download/en/details.aspx?id=14

4) Connect the desktop PC with Microsoft ActiveSync installed and iW-G15 board using USB OTG cable.
5) We can explore the iW-G15 files in the Desktop PC using Microsoft ActiveSync Application, then we can copy files from and to the system.
6) While connecting the OTG cable please make sure that the Active Sync for the last communication has properly disconnected the device from the PC. This has to be confirmed every time while inserting the OTG cable.

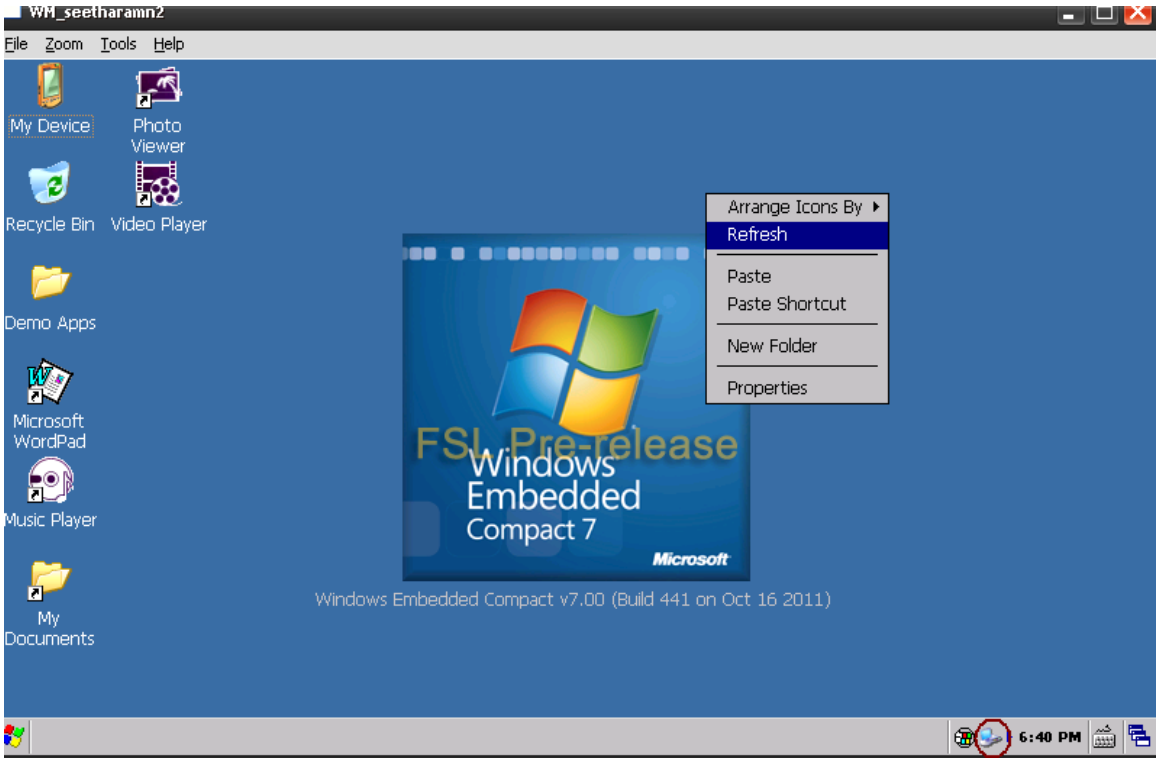

Figure 11:USB OTG detection

7) The symbol marked on above image will disappear once the OTG cable is disconnected from the port as shown in below snap shot.

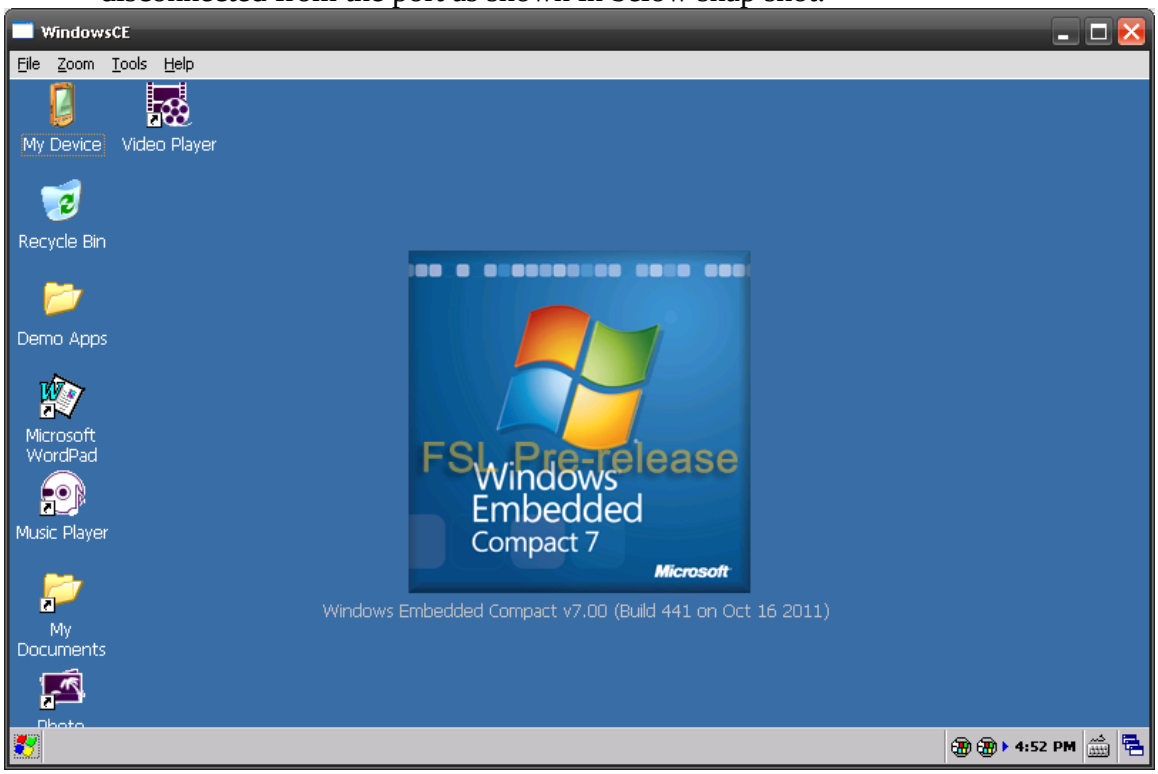

Figure 12: USB OTG disconnection

3.7. Ethernet

This section explains about using Ethernet.

Configuring the IP Using DHCP

Procedure

1) Power on iW-G15 platform.
2) Boot WinCE7.0.
3) Connect Ethernet cable to the iW-G15 board.
4) Configure WinCE 7.0 with DHCP IP Configurations as follows.
5) Go to Start → Settings → Network and Dial-Up Connections.

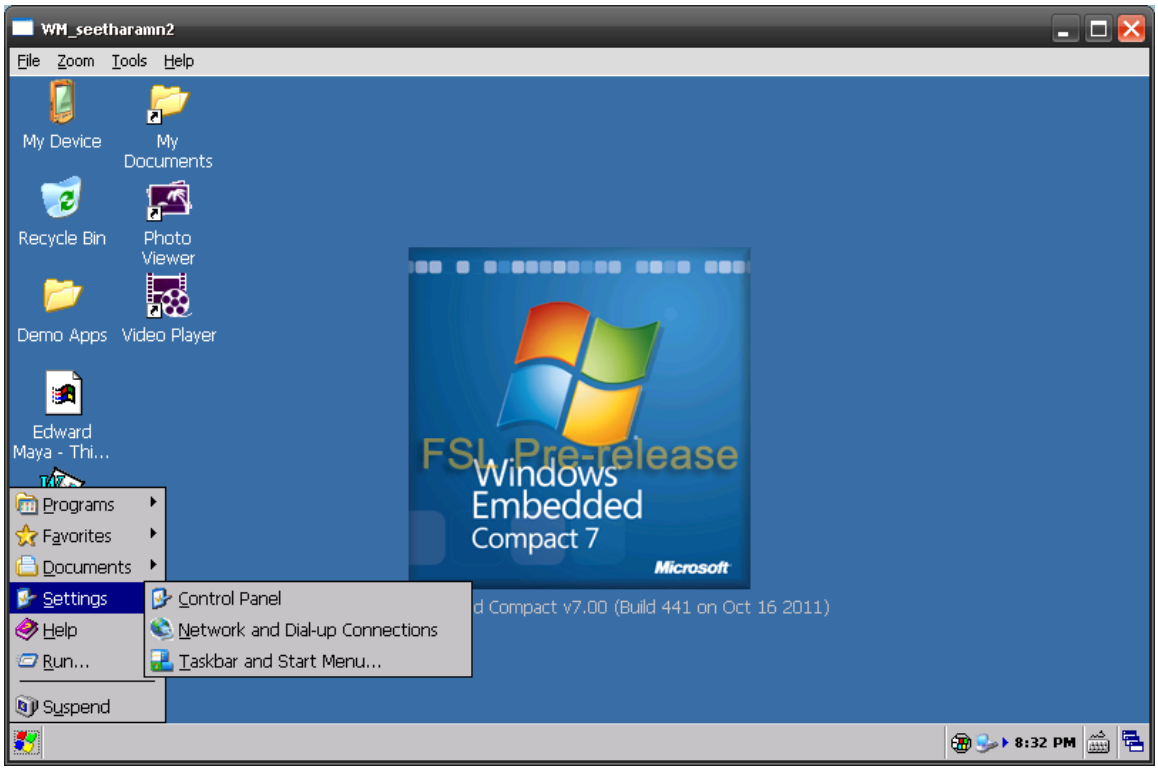

Figure 13:Ethernet IP assignment

6) Right Click “ENET1” icon and Click Properties.

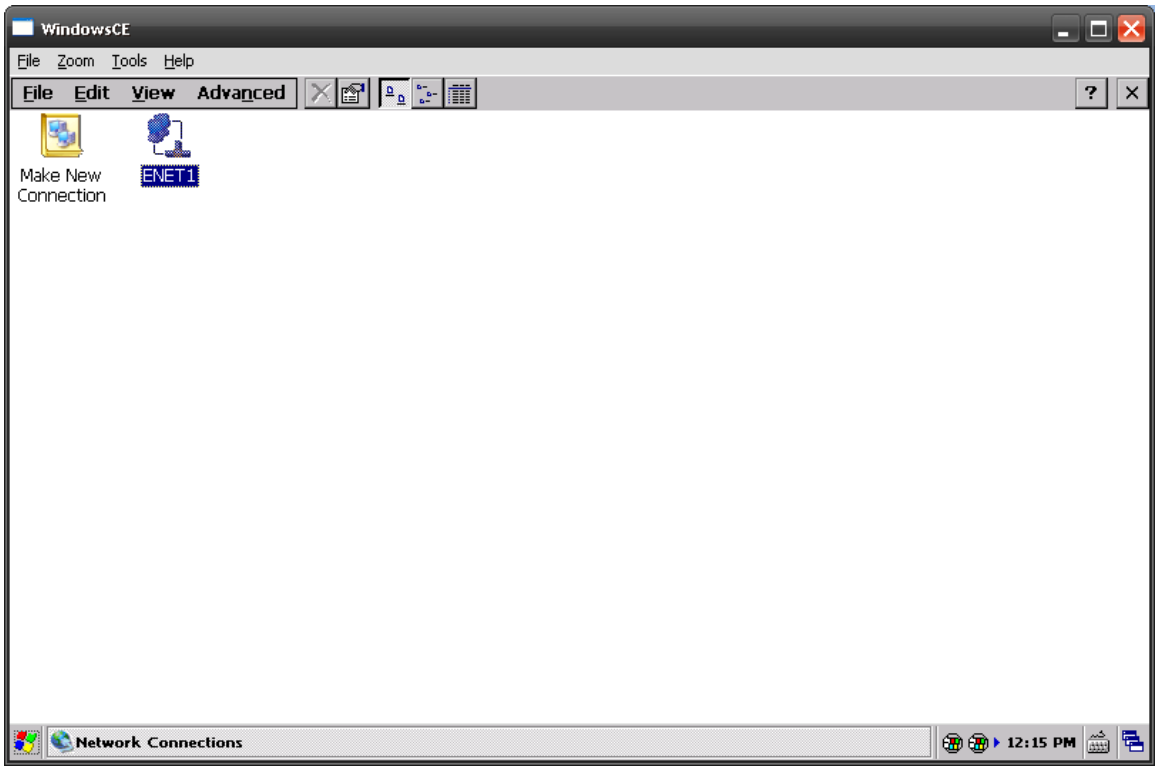

Figure 14:Ethernet IP assignment (contd)

7) Select the DHCP IP option as follows and click OK.

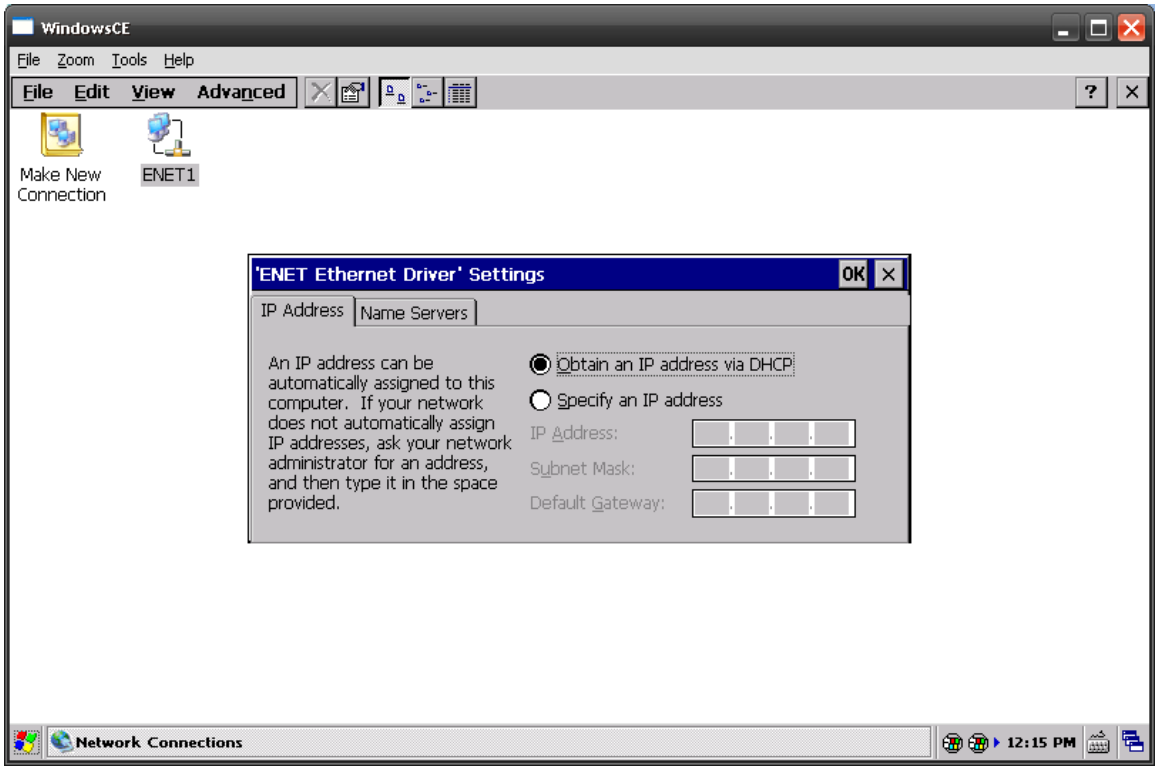
WindowsCE
File Zoom Tools Help
File Edit View Advanced
Make New Connection
ENET1
'ENET Ethernet Driver' Settings
OK
IP Address
Name Servers
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space provided.
Obtain an IP address via DHCP
Specify an IP address
IP Address:
Subnet Mask:
Default Gateway:
Network Connections
12:15 PM

Figure 15: DHCP IP assignment

8) Click the inverted ‘T’ icon in the Task bar of the WinCE 7.0 screen as shown below.

Figure 16: Ethernet detection

9) This will show the IP from the DHCP Server in an popup window as follows

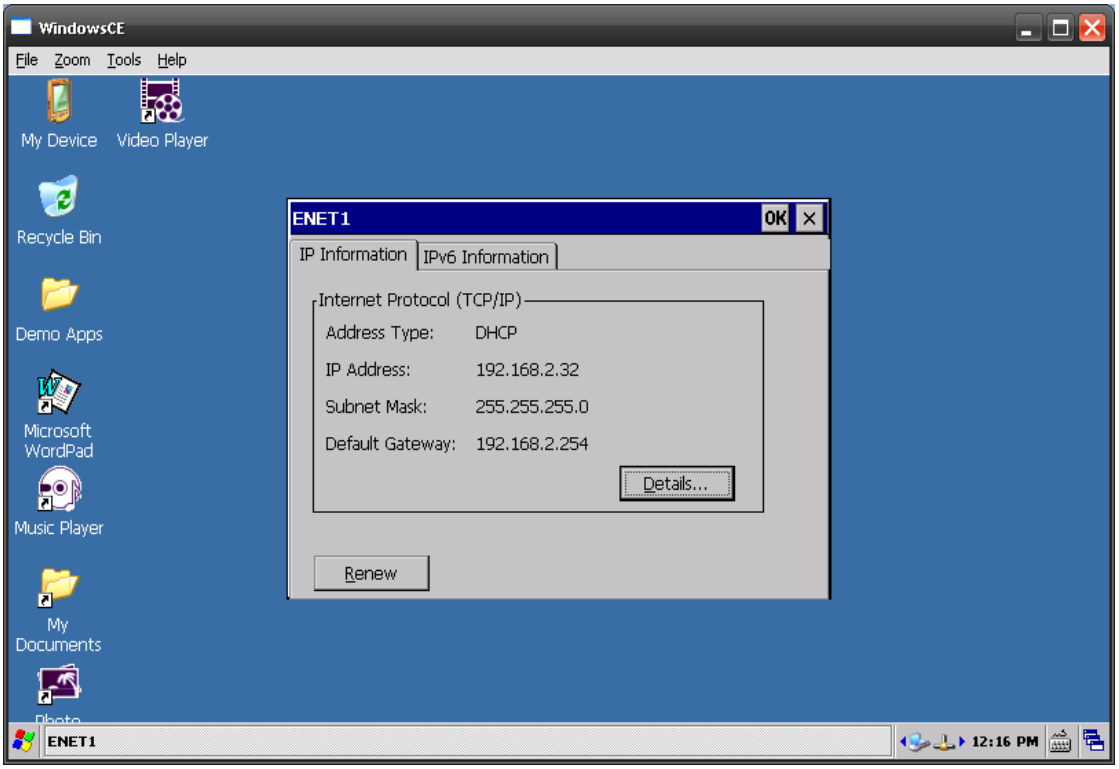

Figure 17: Getting DHCP IP

Configuring the Static IP
Case 1:
Procedure

1) Power on iW-G15 platform.
2) Boot WinCE7.0.
3) Connect Ethernet cable to the iW-G15 platform.
4) Configure WinCE 7.0 with static IP Configurations as follows.
5) Go to Start → Settings → Network and Dial-Up Connections

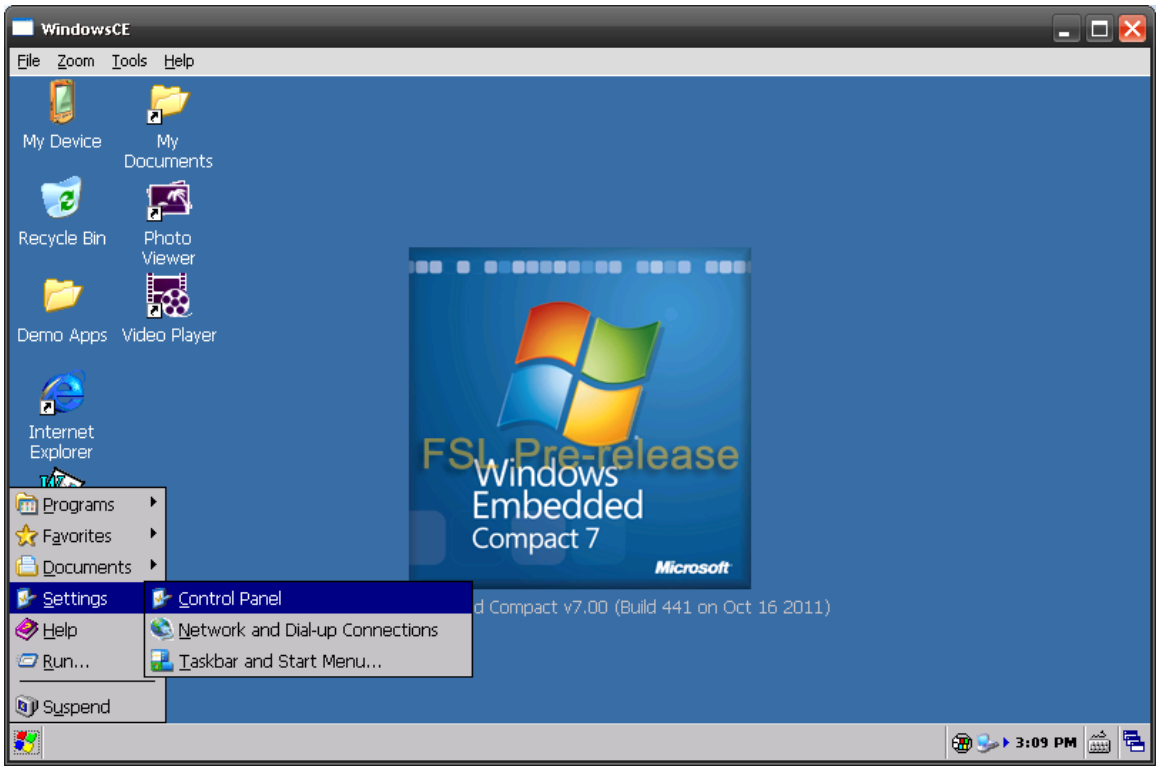

Figure 18: Setting static IP

6) Right Click “ENET1” icon and Click Properties.

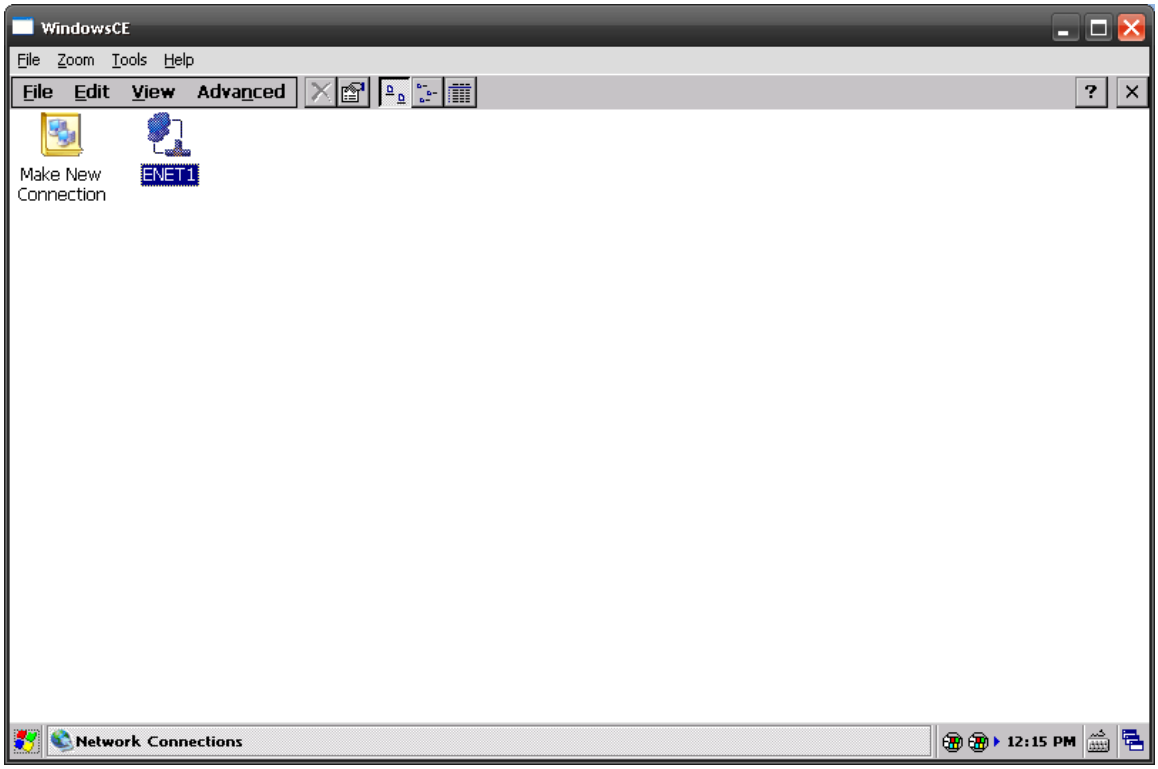

Figure 19: Setting static IP (contd)

7) Select the static IP option as follows and click OK.

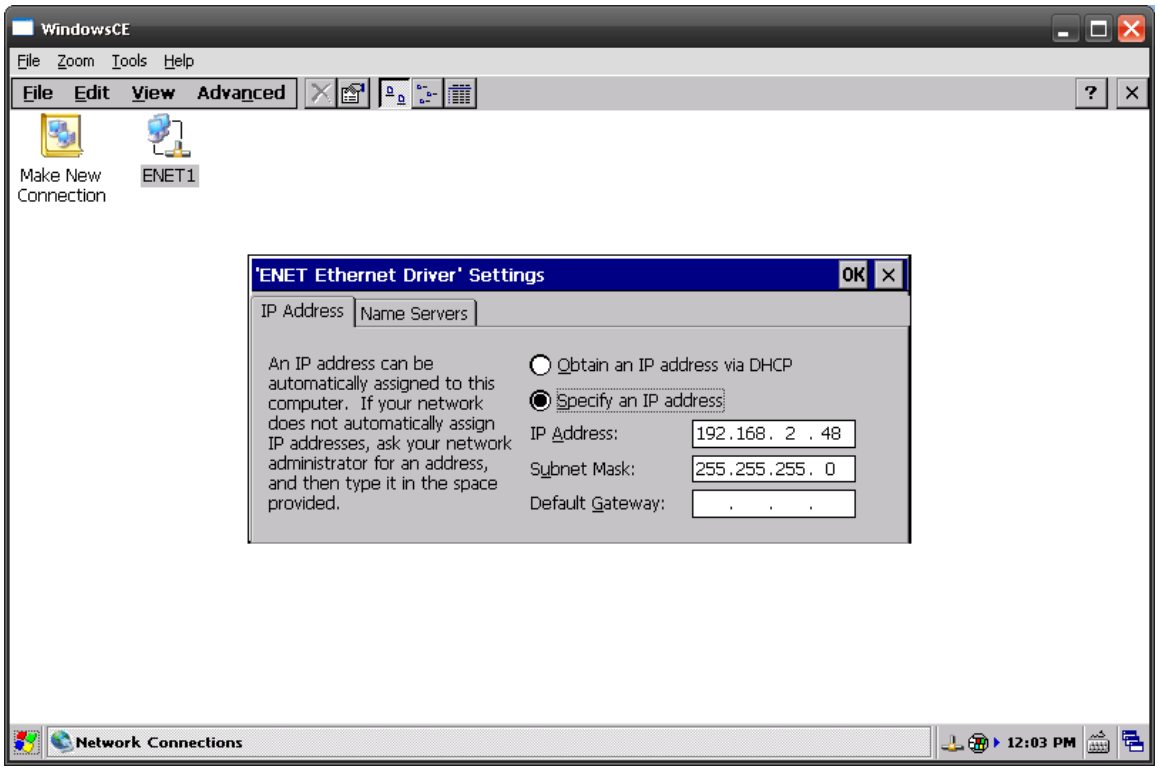
WindowsCE
File Zoom Tools Help
File Edit View Advanced
Make New Connection
ENET1
'ENET Ethernet Driver' Settings
OK
IP Address
Name Servers
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space provided.
Obtain an IP address via DHCP
Specify an IP address
IP Address: 192.168. 2 . 48
Subnet Mask: 255.255.255. 0
Default Gateway:
Network Connections
12:03 PM

Figure 20: Static IP set

8) Click the inverted ‘T’ icon in the Task bar of the WinCE 7.0 screen as shown below.

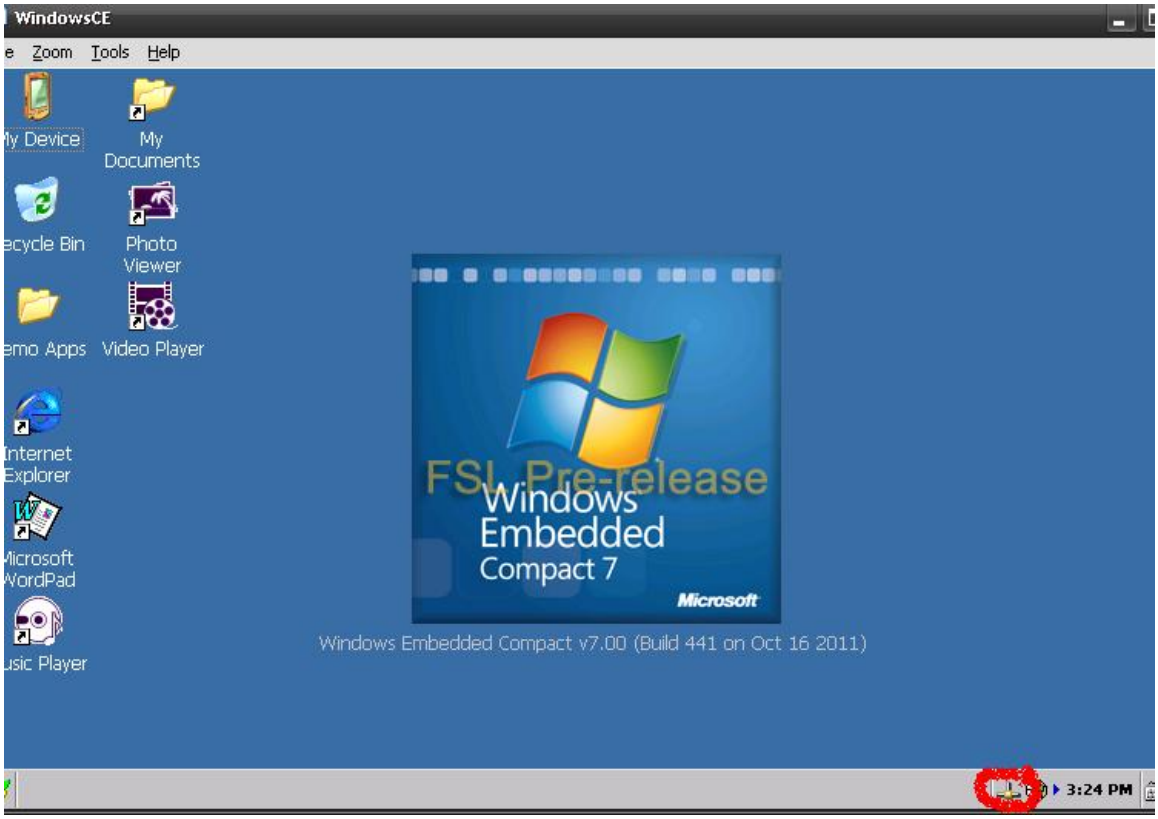

Figure 21:Inverted symbol of Ethernet connection after static IP

9) This will show the IP from the static IP configuration in a popup window as follows.

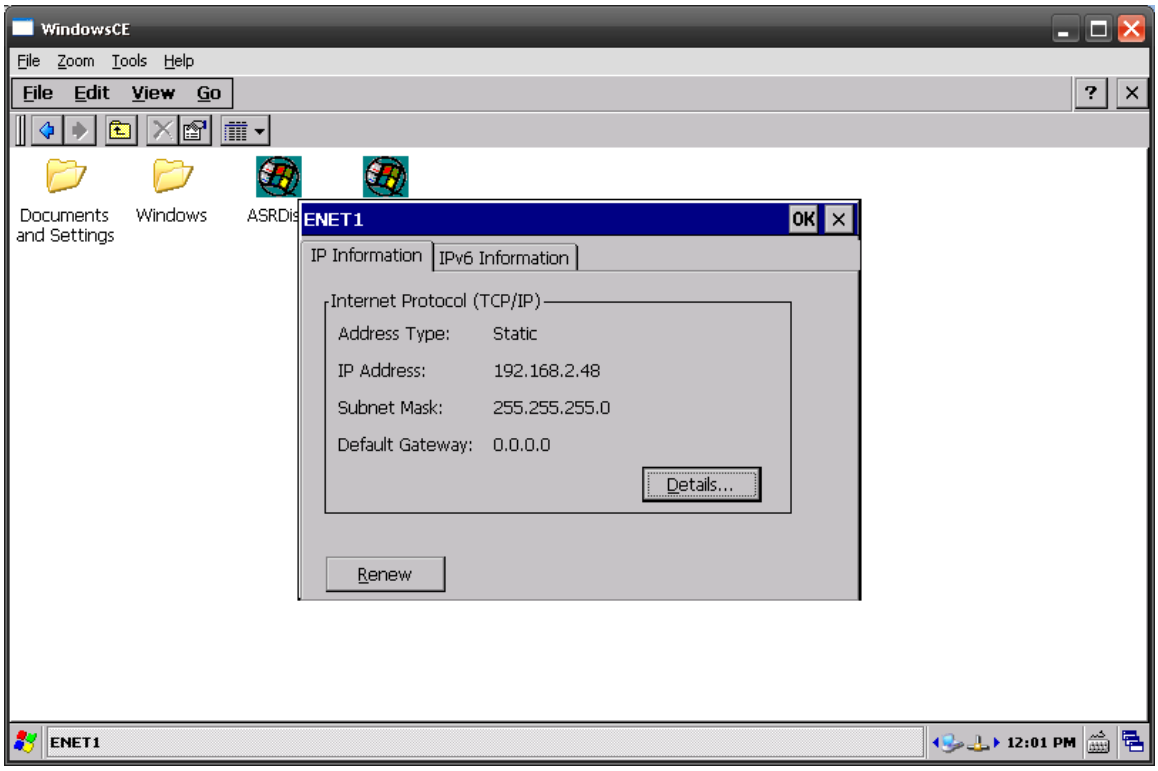

Figure 22: Static IP set

Case 2:
Procedure

1) Power on iW-G15 platform.
2) Boot WinCE7.0.
3) Connect Ethernet cable to the iW-G15 platform.
4) Configure WinCE 7.0 with static IP Configurations as follows.
5) Go to Start → Settings → Network and Dial-Up Connections

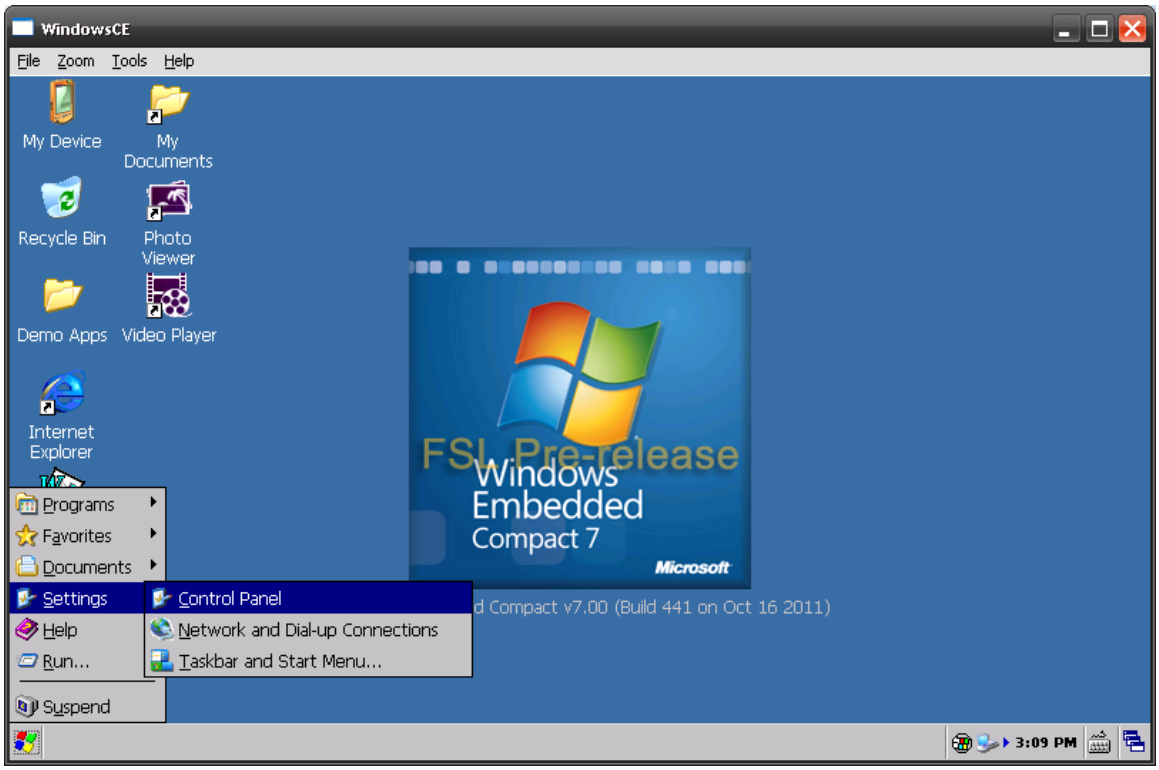

Figure 23: Setting static IP for case 2

6) Right Click “ENET1” icon and Click Properties.

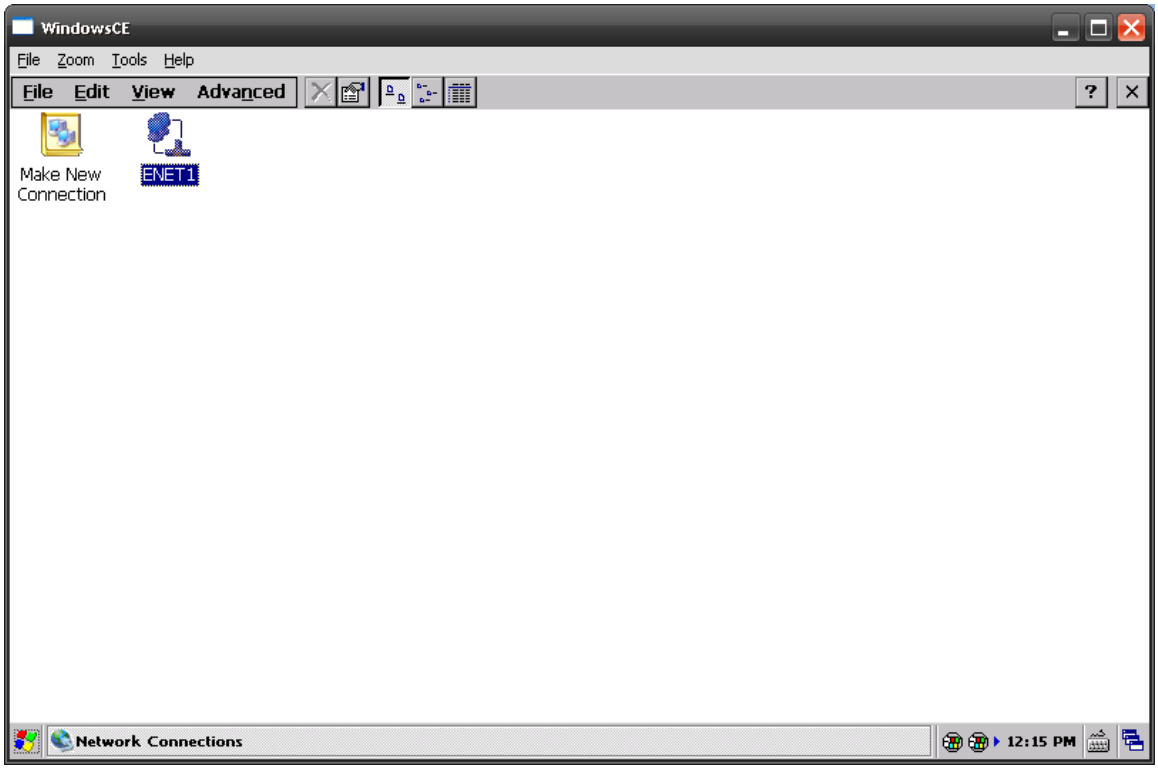

Figure 24: Setting static IP for case 2 (contd)

7) Select the static IP option as follows and click OK.

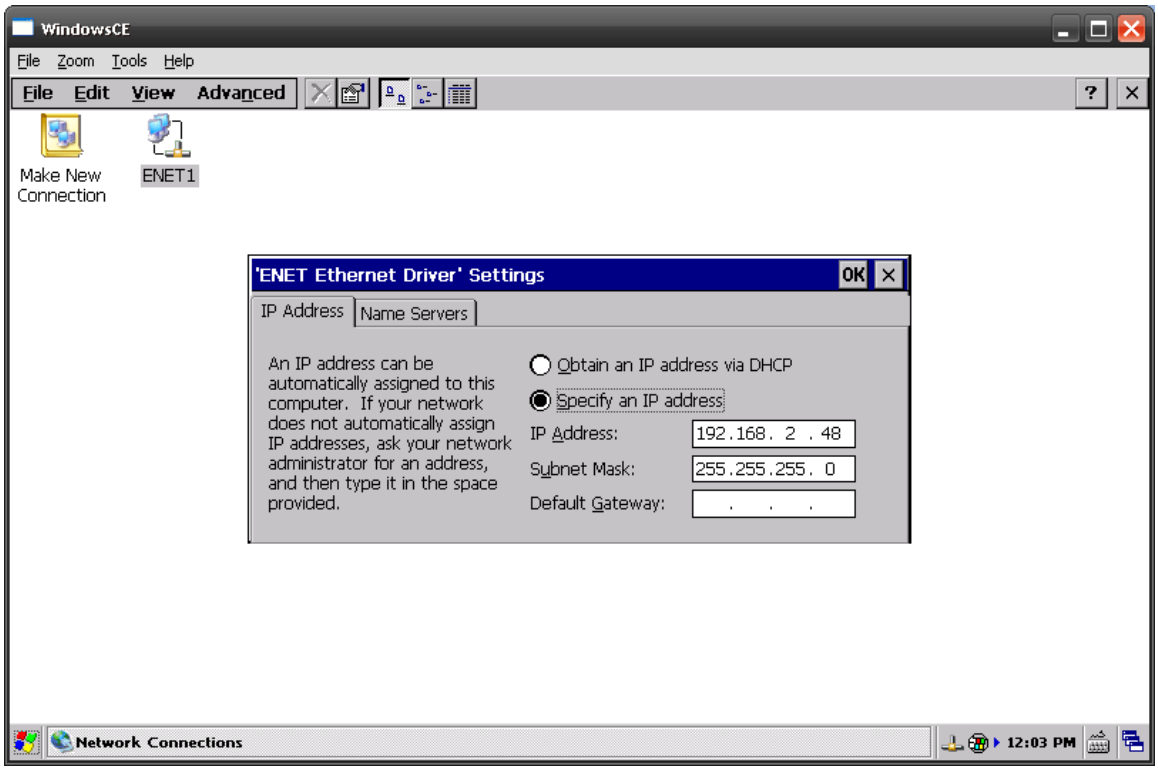
WindowsCE
File Zoom Tools Help
File Edit View Advanced
Make New Connection
ENET1
'ENET Ethernet Driver' Settings
OK
IP Address
Name Servers
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space provided.
Obtain an IP address via DHCP
Specify an IP address
IP Address: 192.168. 2 . 48
Subnet Mask: 255.255.255. 0
Default Gateway:
Network Connections
12:03 PM

Figure 25: Static IP set for case 2

8) Click the inverted ‘T’ icon in the Task bar of the WinCE 7.0 screen as shown below.

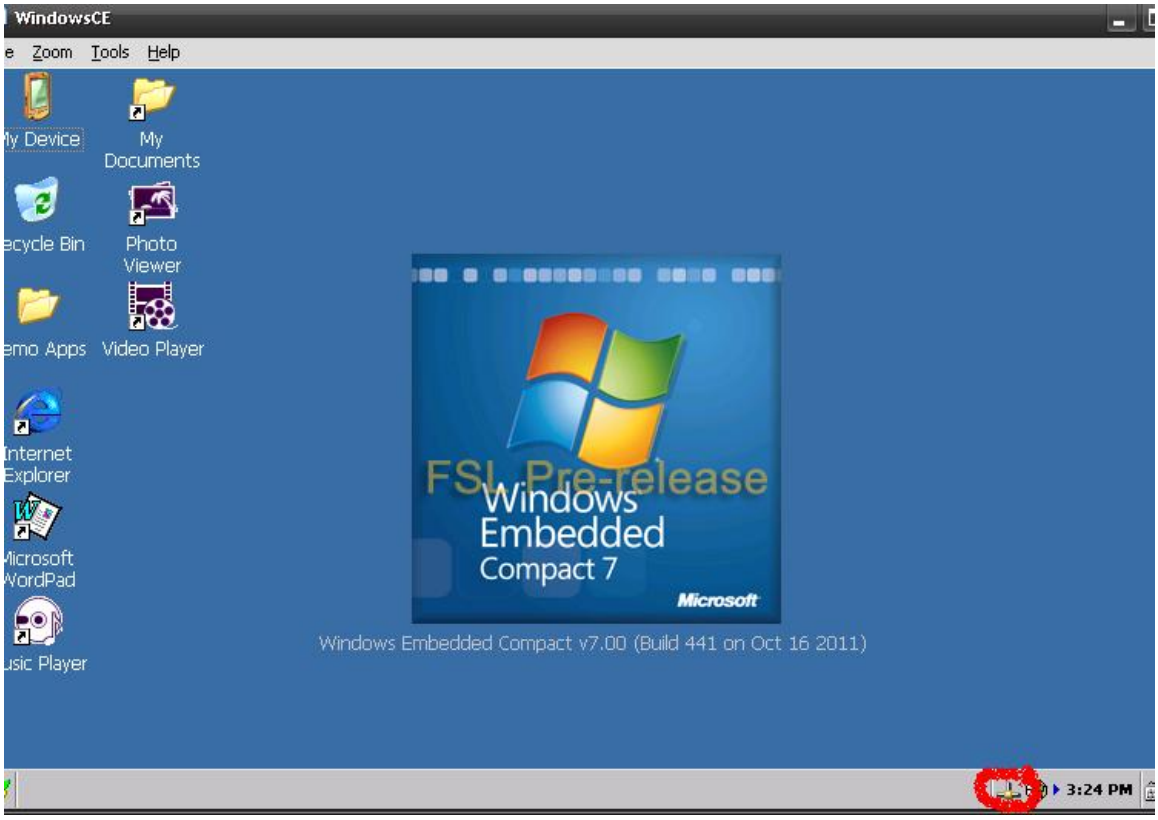

Figure 26: Inverted symbol of Ethenet connection in case 2

9) This will show the IP from the static IP configuration in a popup window as follows.

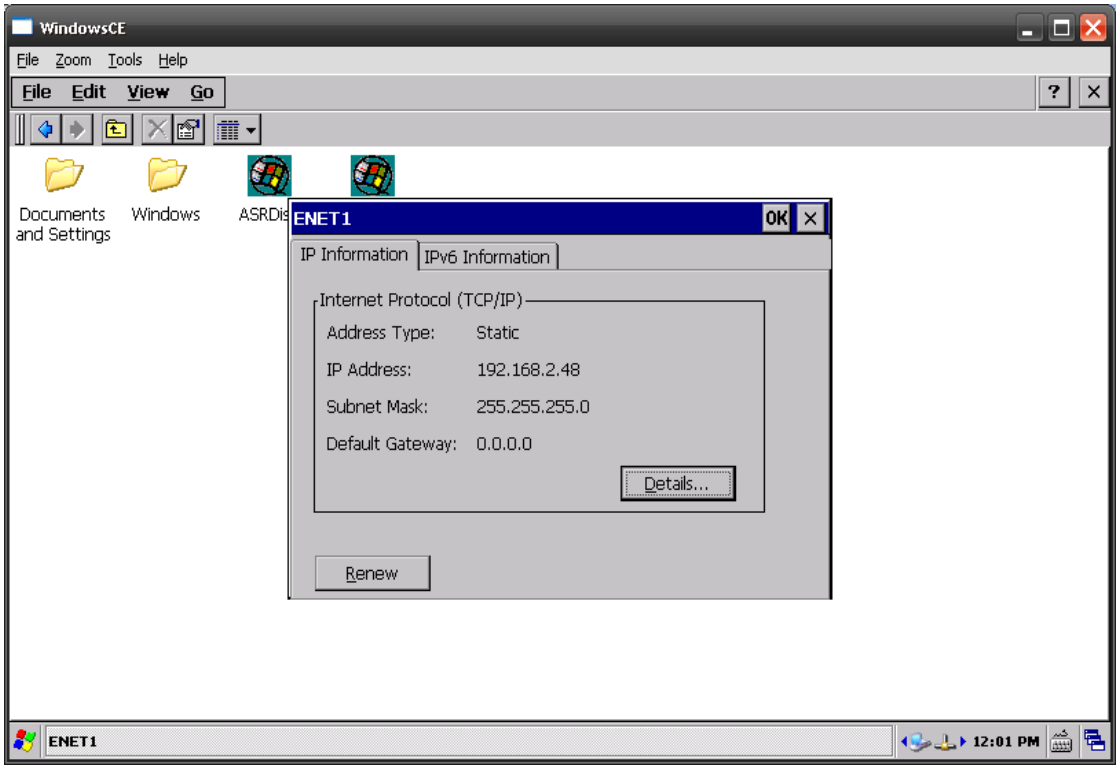

Figure 27: Static IP set case 2

Now in host PC set the IP as static as follows.

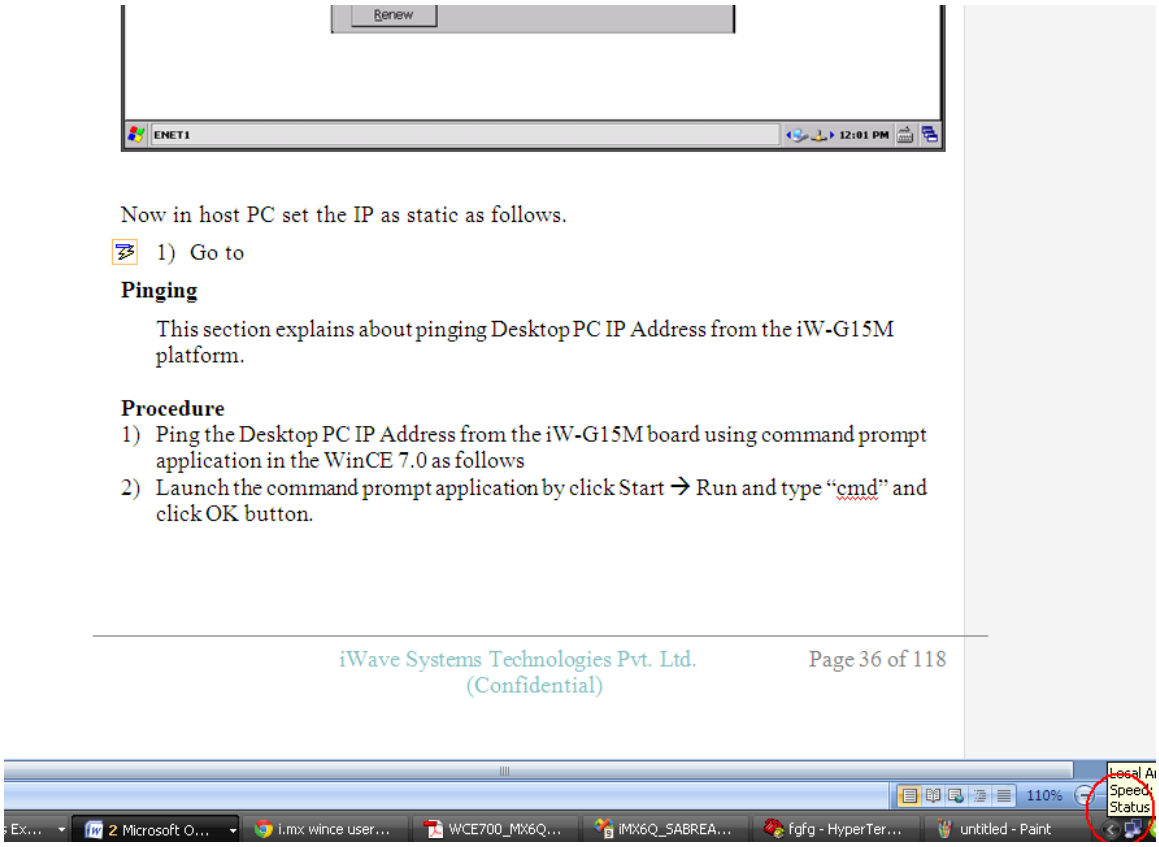
Renew
ENET1
12:01 PM
Now in host PC set the IP as static as follows.
1) Go to
Pinging
This section explains about pinging Desktop PC IP Address from the iW-G15M platform.
Procedure
1) Ping the Desktop PC IP Address from the iW-G15M board using command prompt application in the WinCE 7.0 as follows
2) Launch the command prompt application by click Start → Run and type "cmd" and click OK button.
iWave Systems Technologies Pvt. Ltd.
(Confidential)
Page 36 of 118
110%
Speed:
Status
2 Microsoft O...
i.mx wince user...
WCE700_MX6Q...
iMX6Q_SABREA...
fgfg - HyperTer...
untitled - Paint

Figure 28: Setting static IP in host PC case2

10) Right click on the icon marked on above image. Select Open Network Connections as shown in below snap shot.

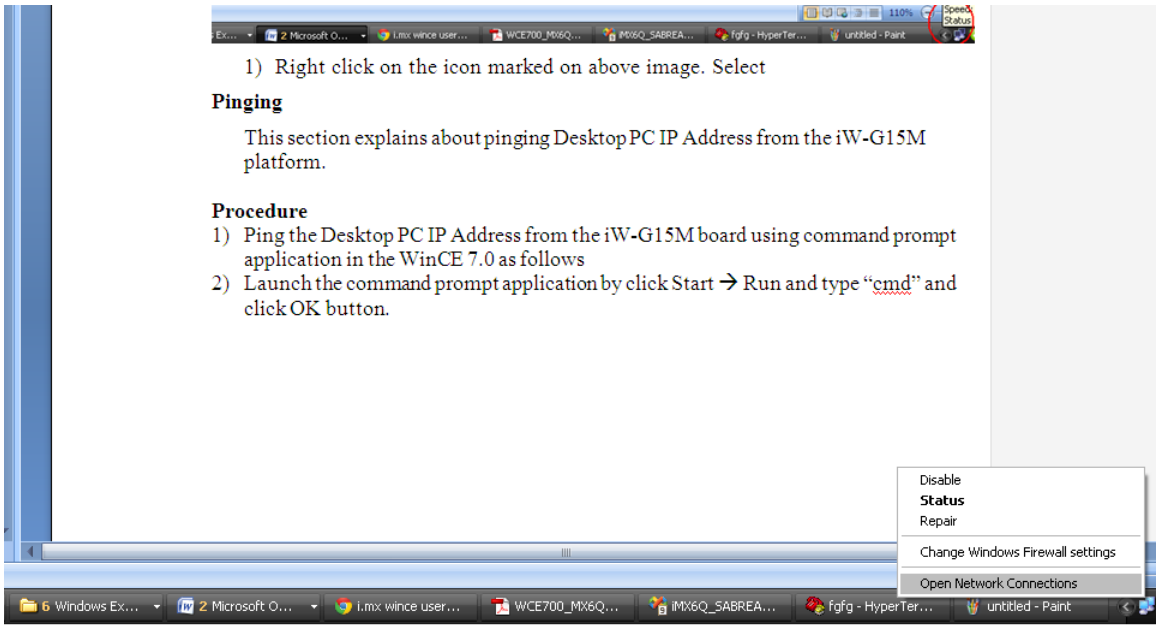
1) Right click on the icon marked on above image. Select
Pinging
This section explains about pinging Desktop PC IP Address from the iW-G15M platform.
Procedure
1) Ping the Desktop PC IP Address from the iW-G15M board using command prompt application in the WinCE 7.0 as follows
2) Launch the command prompt application by click Start → Run and type "cmd" and click OK button.
Disable
Status
Repair
Change Windows Firewall settings
Open Network Connections
6 Windows Ex...
2 Microsoft O...
i.mx wince user...
WCE700_MX6Q...
iMX6Q_SABREA...
fgfg - HyperTer...
untitled - Paint

Figure 29: Setting static IP in host PC case2 (contd)

11) Following screen would appear.

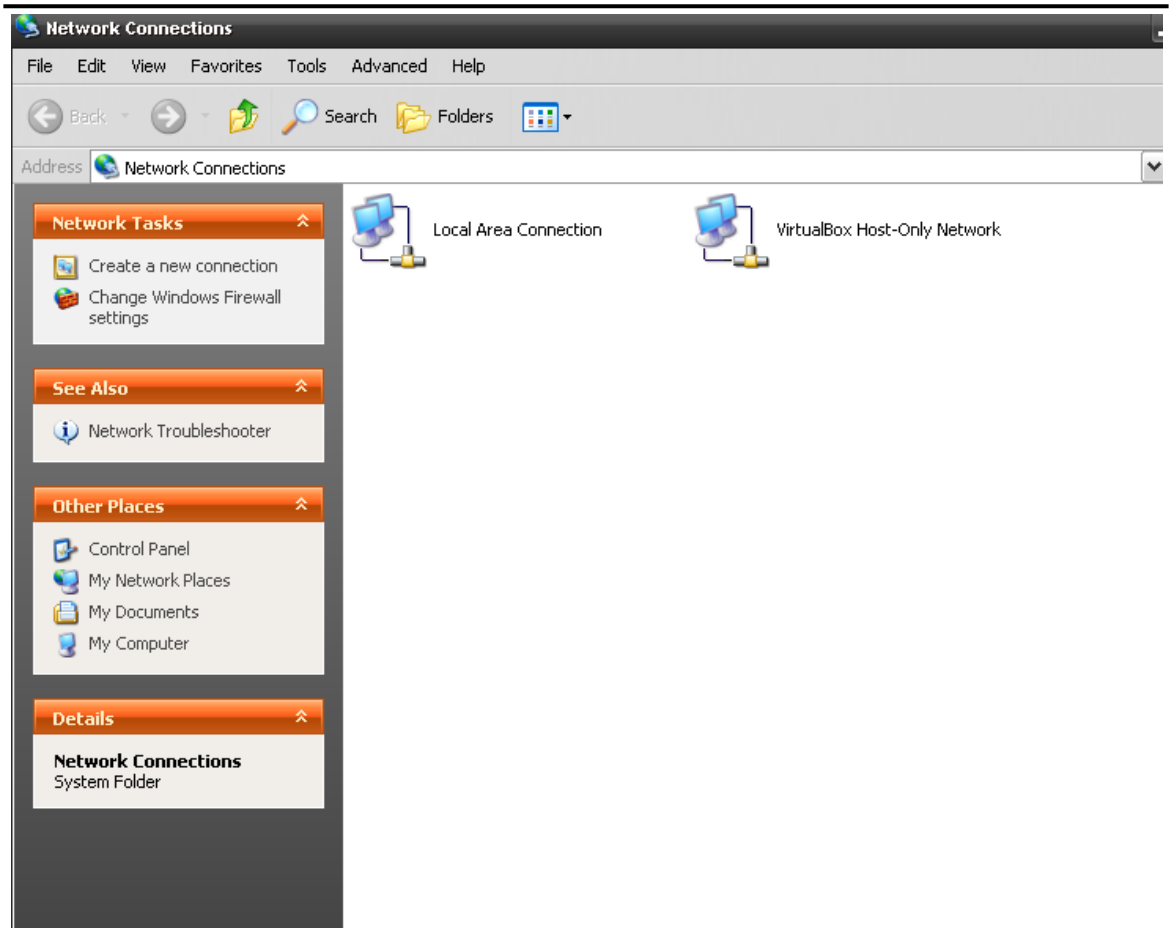

Figure 30: Setting static IP in host PC case2 (Network connections)

12) Double click on Local Area Connection and select properties tab as shown below.

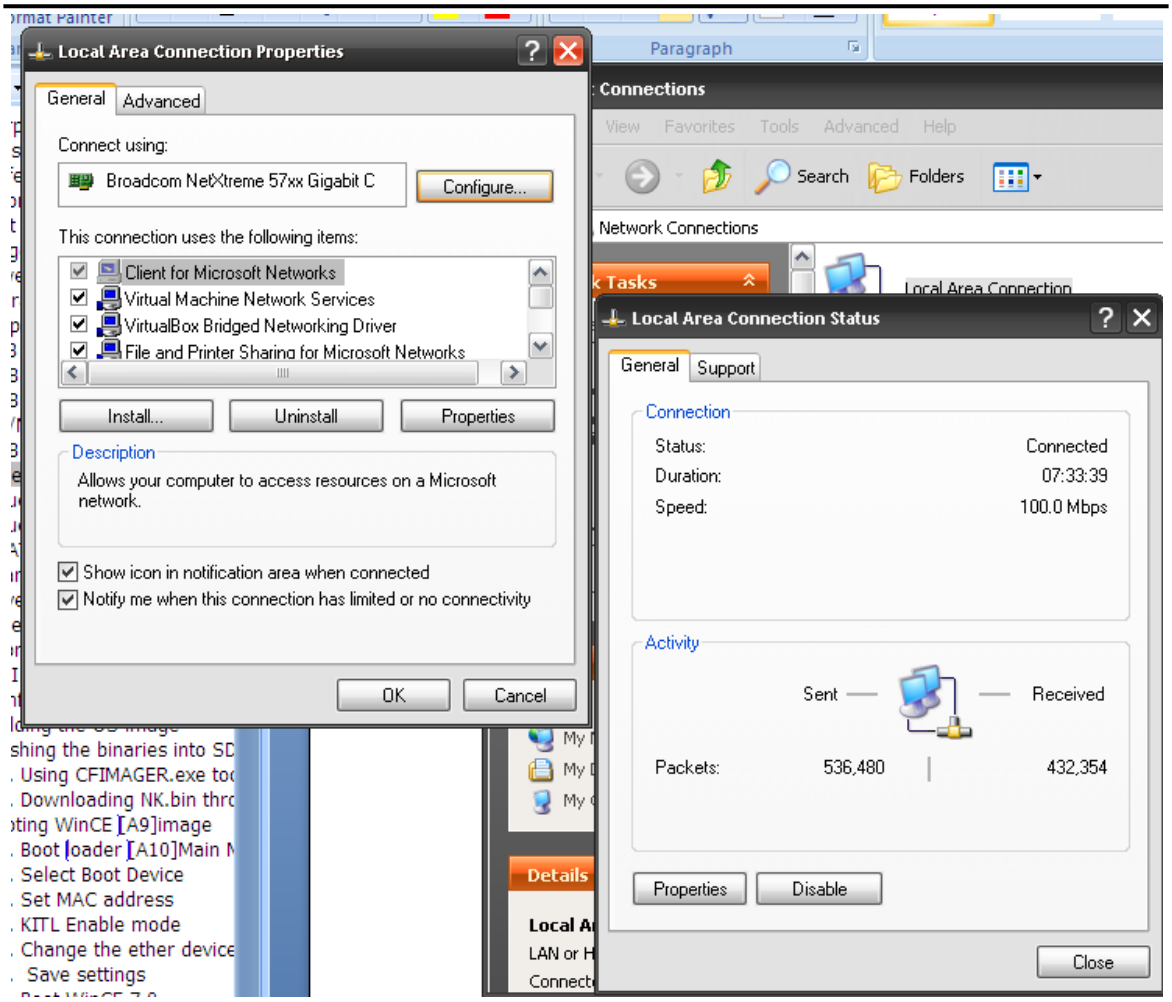

Figure 31: Local area connection properties

13) Scroll down items to select Internet Protocol (TCP/IP) and click on properties tab. Following screen would appear.

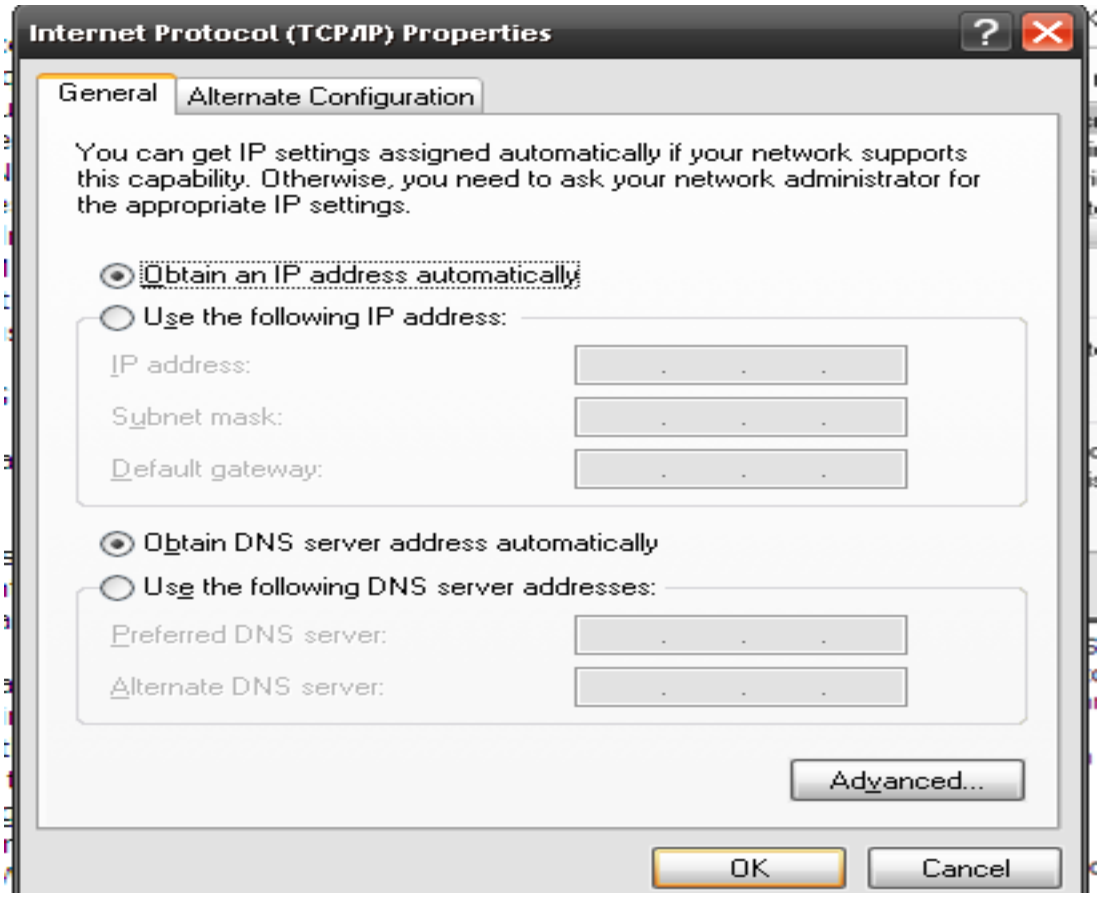
Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 32: Internet Protocol(TCP/IP) Properties

14) Click on Use the following IP address and set the IP address and subnet mask.

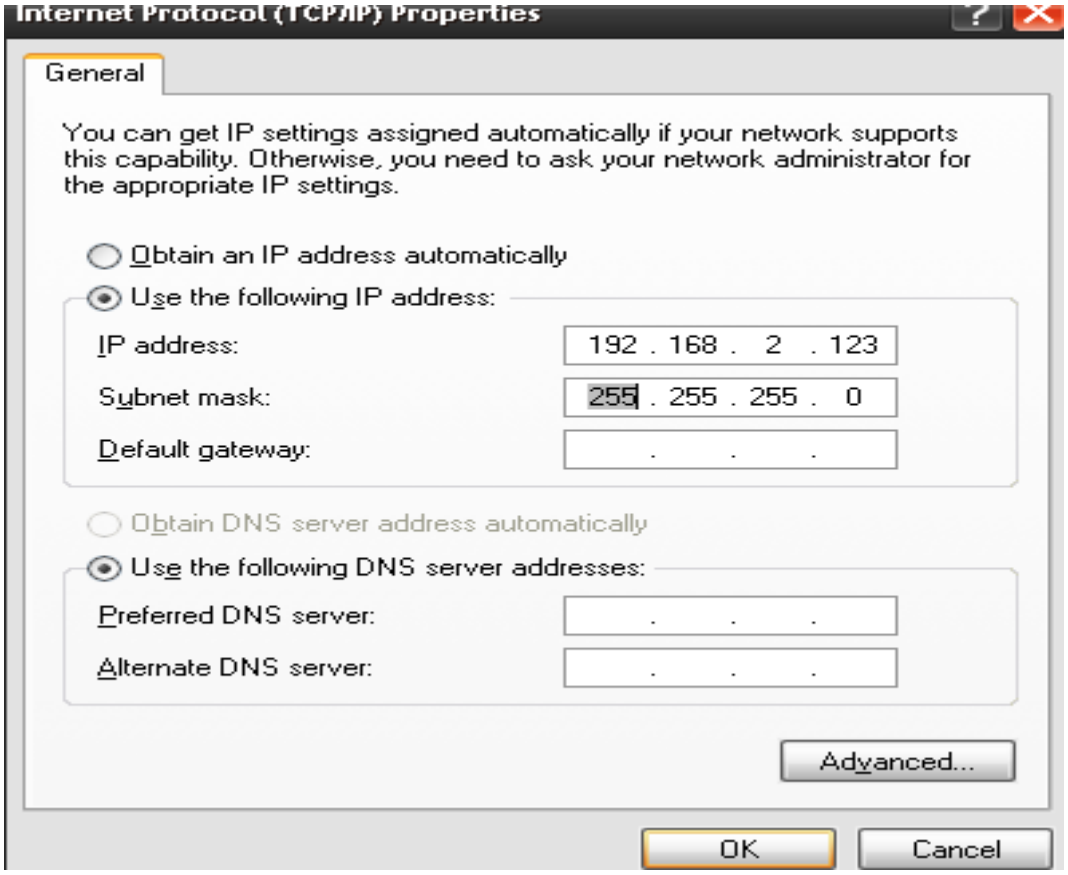
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 2 . 123
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 33: Internet Protocol Properties (contd)

15) Click OK.
16) Use cross cable to connect the target device and Host PC. Ping the Target device IP from Host PC and vice- versa.

Pinging

This section explains about pinging Desktop PC IP Address from the iW-G15 platform.

Procedure

1) Ping the Desktop PC IP Address from the iW-G15 board using command prompt application in the WinCE 7.0 as follows
2) Launch the command prompt application by click Start → Run and type “cmd” and click OK button.

Figure 34: Entering to command prompt

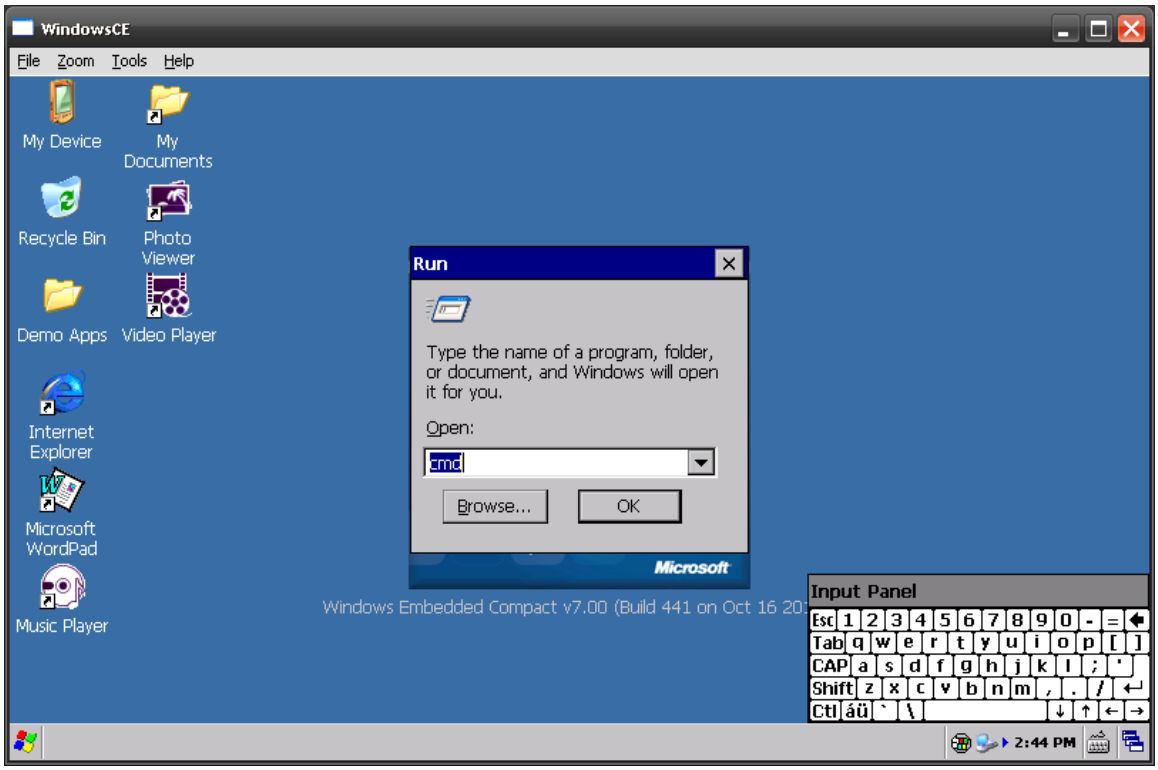

Figure 35: Entering command prompt (contd)

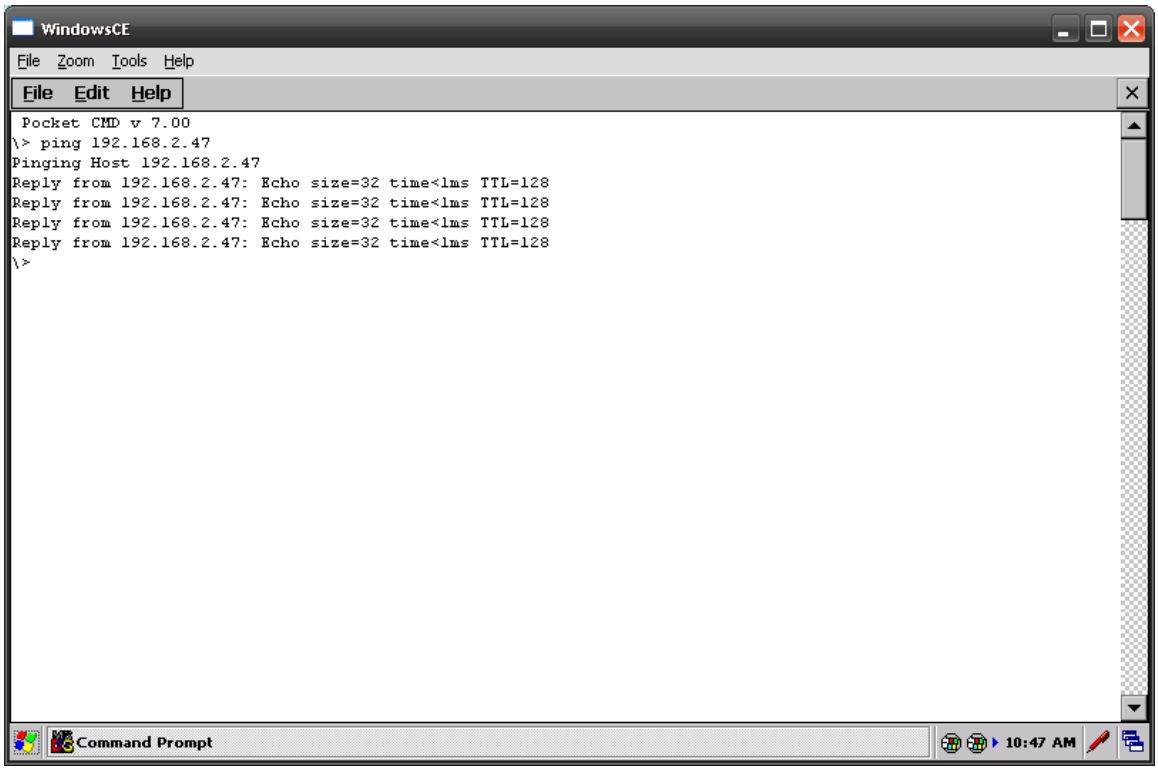
WindowsCE
File Zoom Tools Help
File Edit Help
Pocket CMD v 7.00
\> ping 192.168.2.47
Pinging Host 192.168.2.47
Reply from 192.168.2.47: Echo size=32 time<1ms TTL=128
Reply from 192.168.2.47: Echo size=32 time<1ms TTL=128
Reply from 192.168.2.47: Echo size=32 time<1ms TTL=128
Reply from 192.168.2.47: Echo size=32 time<1ms TTL=128
\>
Command Prompt
10:47 AM

Figure 36: WinCE command prompt

Internet Explorer

This section explains about launching Internet Explorer in iW-G15 platform.

Procedure

1) Open the Internet Explorer Application in WinCE7.0 desktop screen
2) Internet explorer application opens the web page as shown below.
3) Using this we can browse the internet.

Figure 37: Internet Explorer window

3.8. Touch Calibration Process

This section explains about the Touch Panel Calibration procedure. This is used to calibrate touch panel.

Procedure

1) Connect the LCD interface with iW-G15 platform.
2) Power on iW-G15 platform.
3) Boot the WinCE7.0.
4) Run the Microsoft Touch Calibration test application from Start Menu → Settings → Control Panel → Styles → Calibration (Tab) → Click **Recalibrate.**
5) Calibration window will be as shown below.

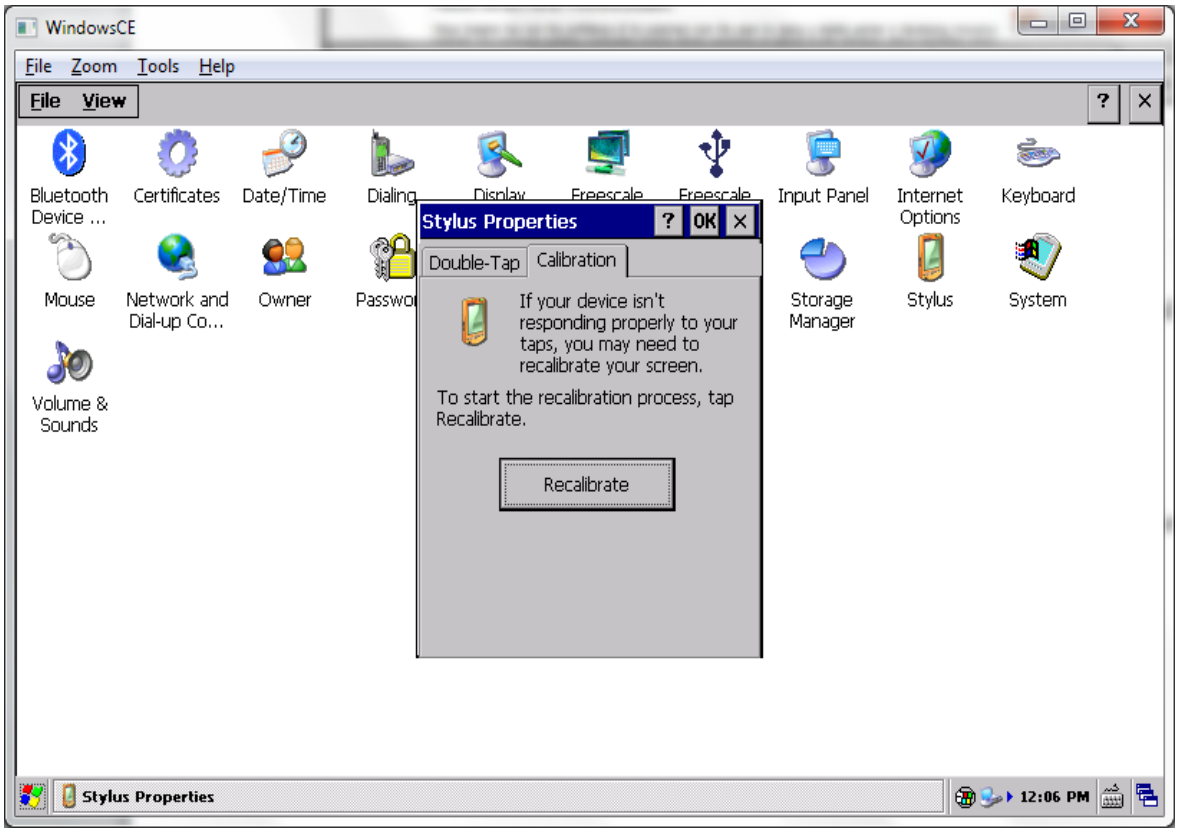

Figure 38: Stylus properties

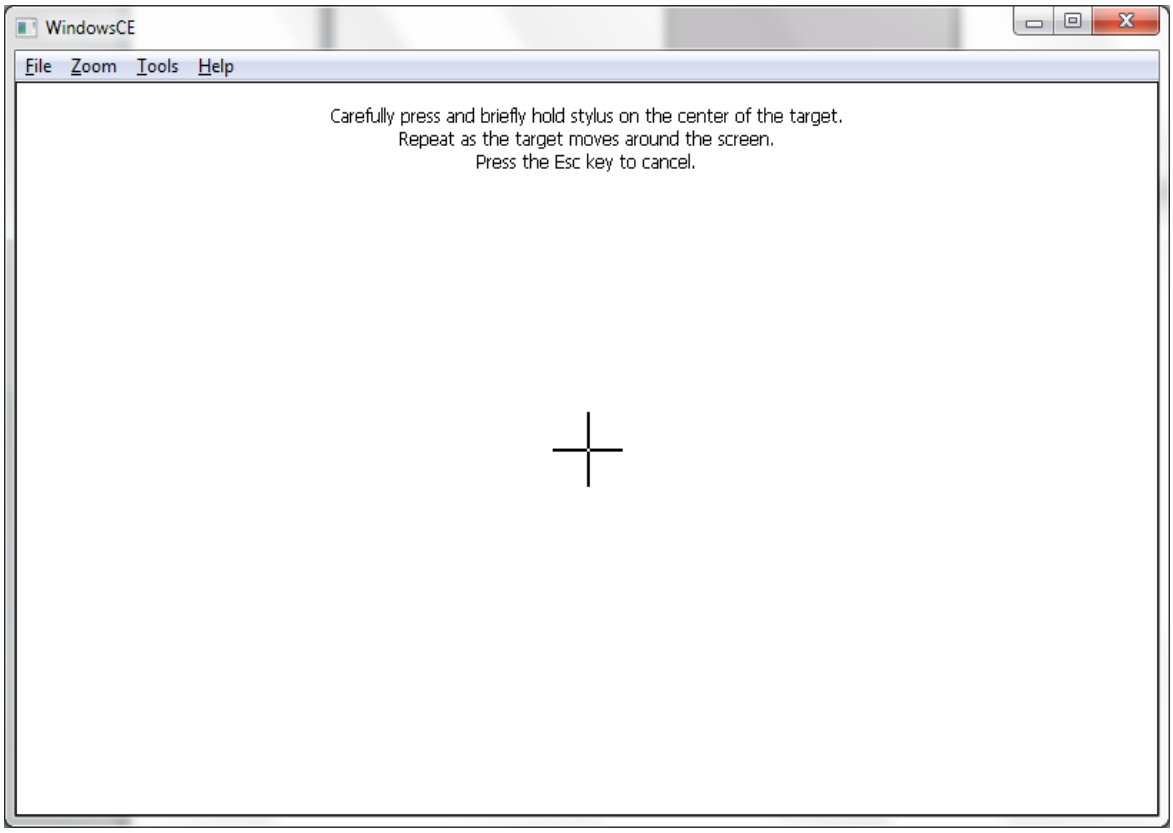
WindowsCE
File Zoom Tools Help
Carefully press and briefly hold stylus on the center of the target.
Repeat as the target moves around the screen.
Press the Esc key to cancel.

Figure 39: Touch calibration

6) Touch the center of the '+' sign, '+' sign will move along the corner. Continue until '+' disappears.

3.9. Touch

This section explains about the checking the touch in iW-G15 board.

Procedure

1) Power on iW-G15 board.
2) Boot WinCE7.0 through SD/MMC card.
3) Run the touch application as follows.

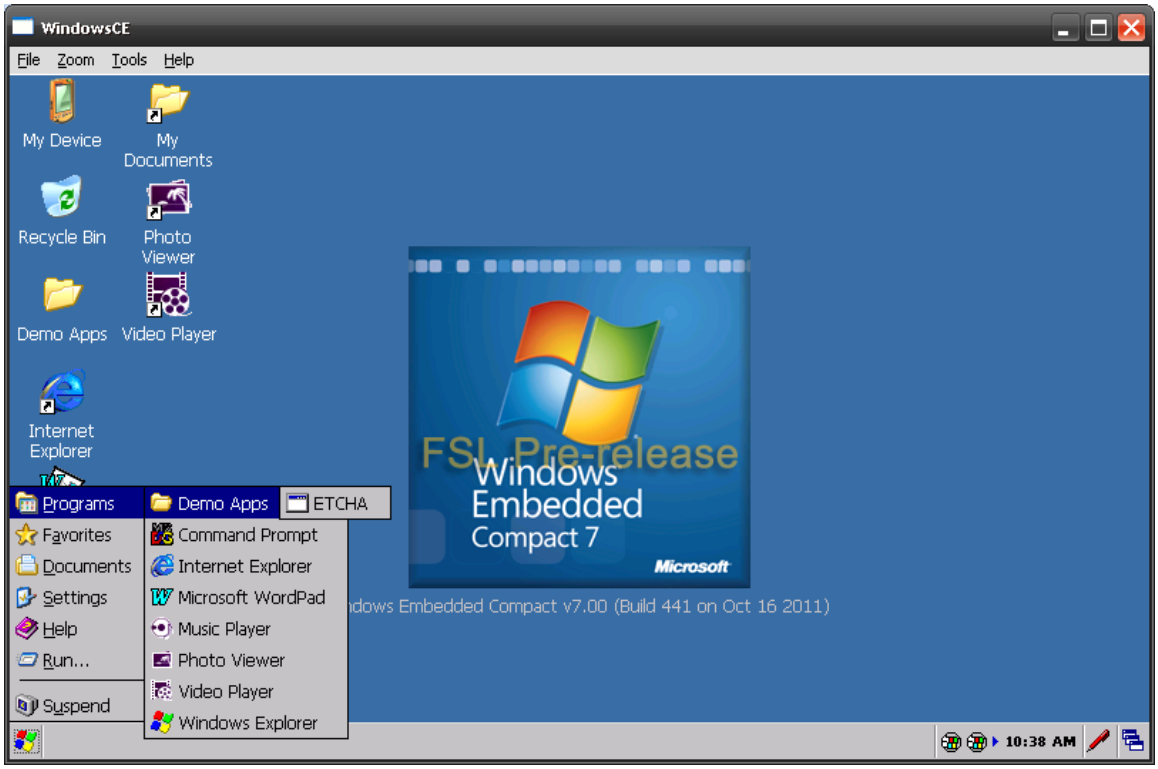

Figure 40: ETCHA application to test touch

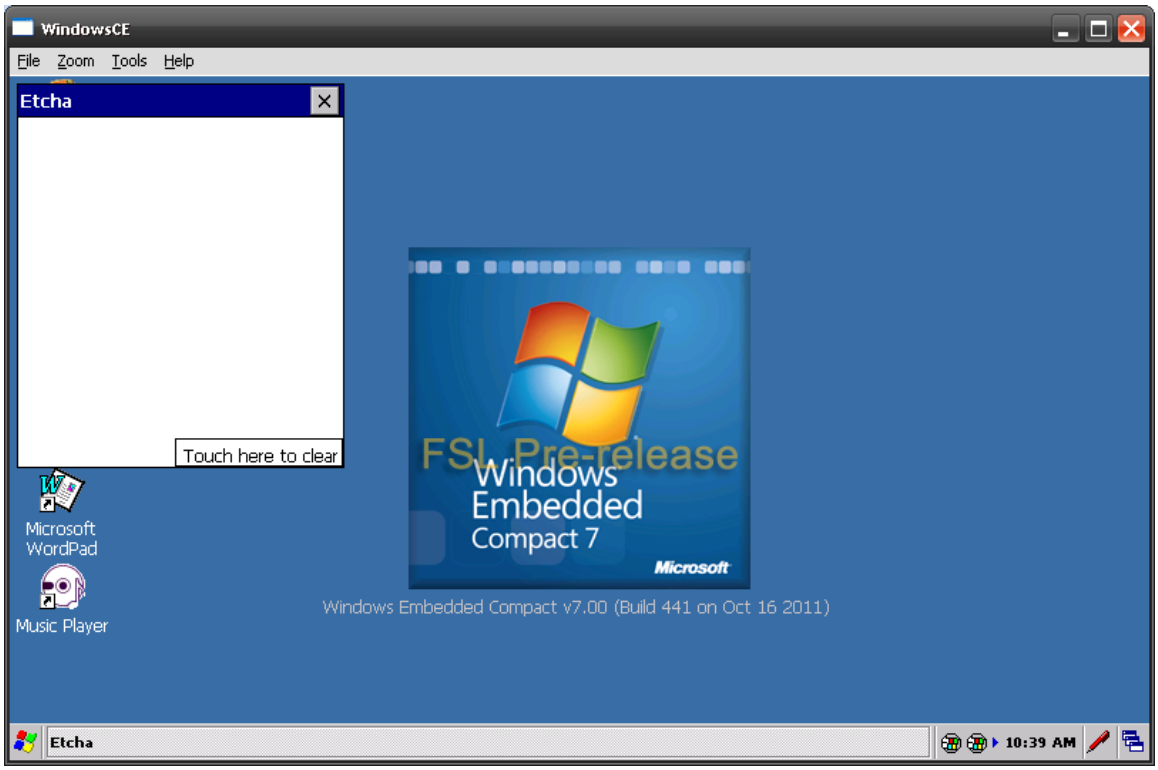

Figure 41: ETCHA application

4) Touch anywhere on the white screen to draw something and you can notice the lines drawn on the surface. And just touch the "Touch here to clear" place to clear the drawings on the surface.

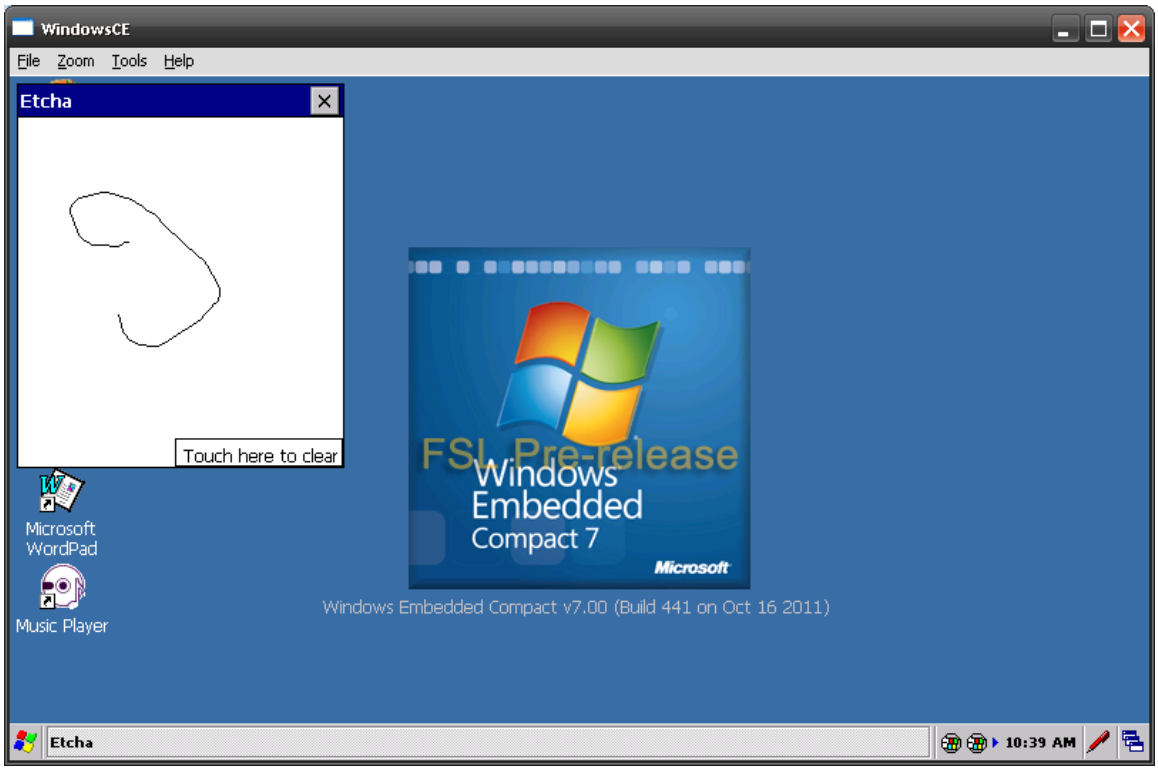

Figure 42: ETCHA application to test touch driver

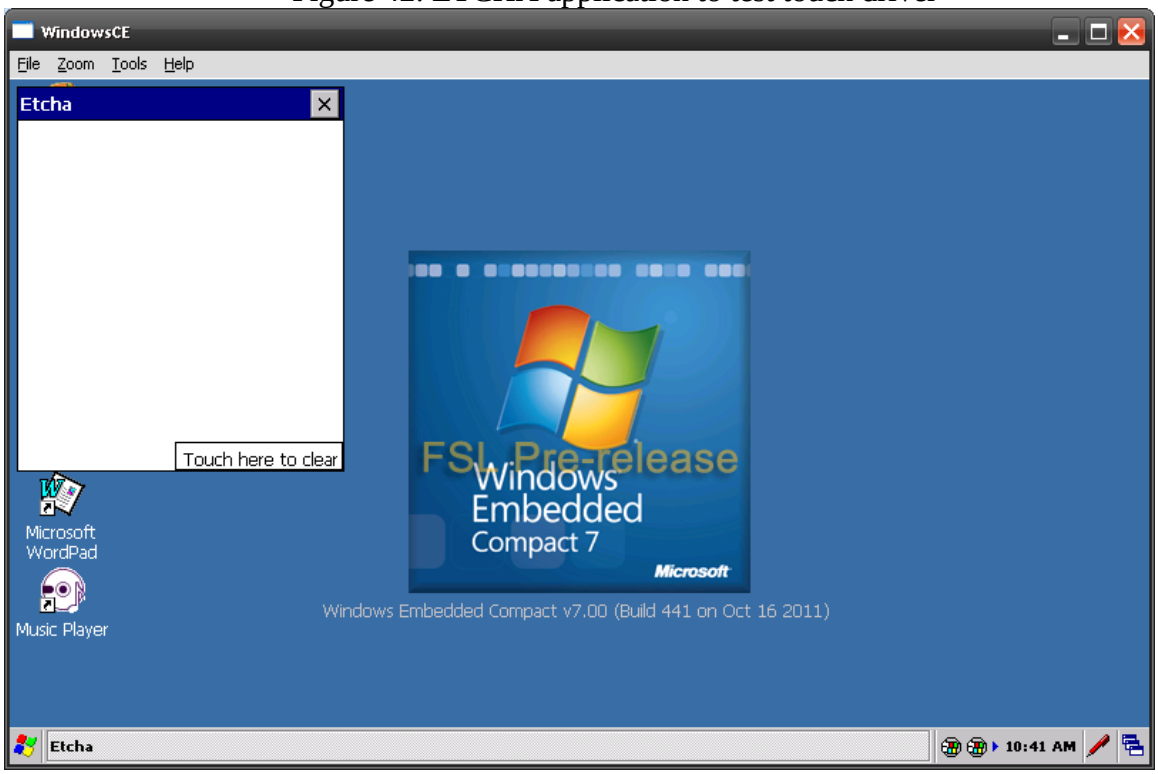

Figure 43:ETCHA application to test touch driver (contd)

3.10. SATA

This section explains the using of SATA Hard disk in iW-G15 platform.

Procedure

1) Connect SATA hard disk drive to the slot provided in the iW-G15 board.
2) Power on iW-G15 board.
3) Boot WinCE7.0 through SD/MMC card.
4) "Hard Disk" folder available in the "My Device" Folder.
5) "Hard Disk" icon is shown as and Not as .
6) Size of the Hard Disk is approximately near to the size of the Hard disk inserted.

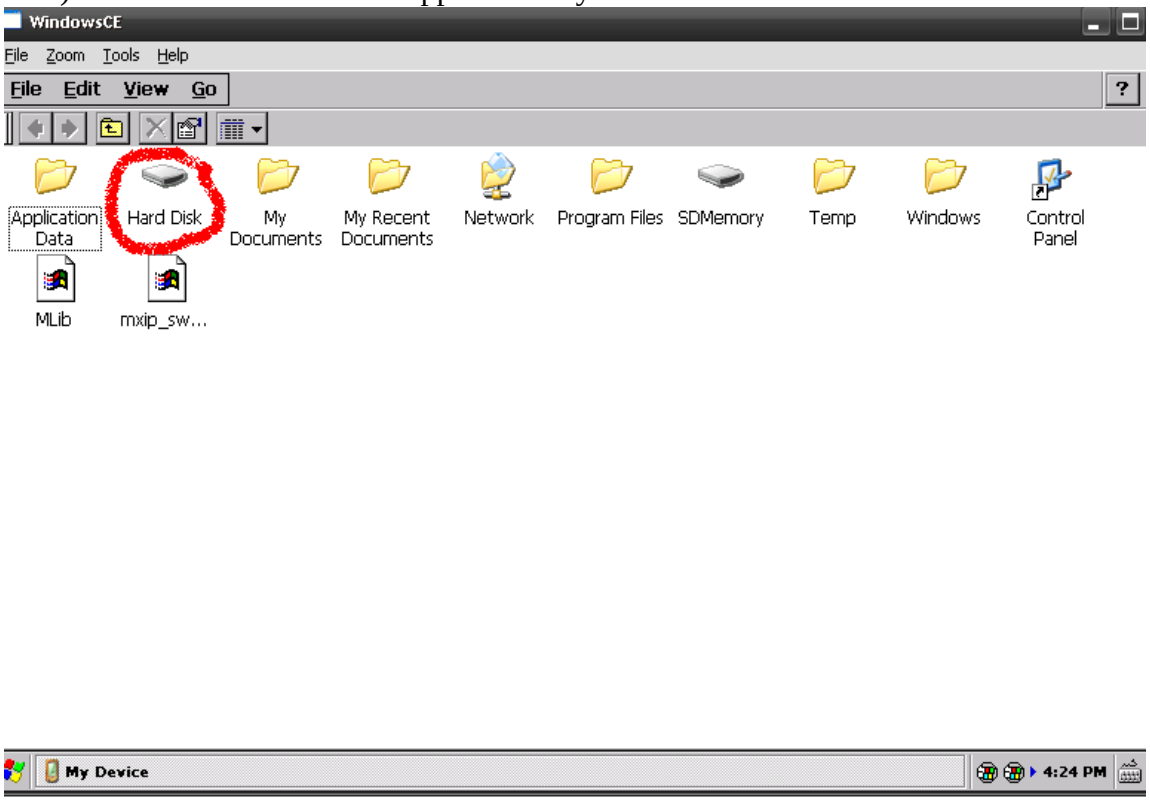

Figure 44: SATA disk

4. Miscellaneous Testing

4.1. Open GL and Open VG applications

1) Go to “My device->Windows” following screen will appear.

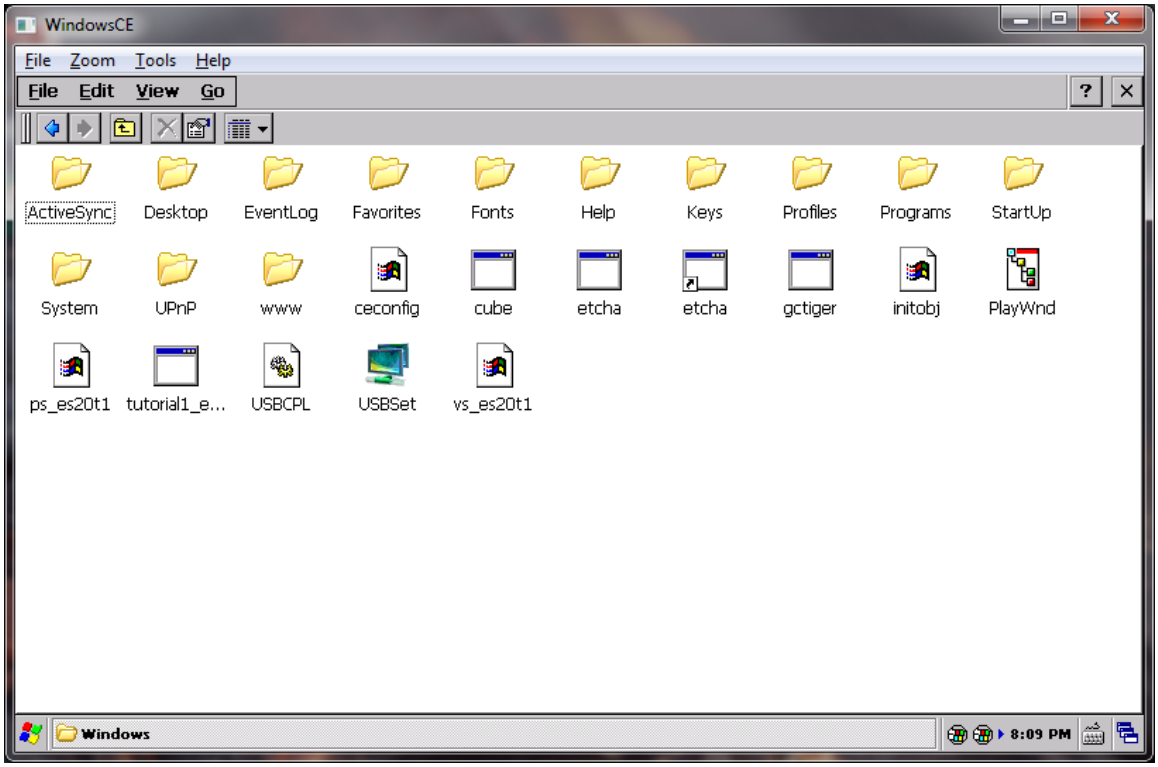

Figure 45: SATA disk

2) Now locate “cube” application and double click on it. It will run the application.

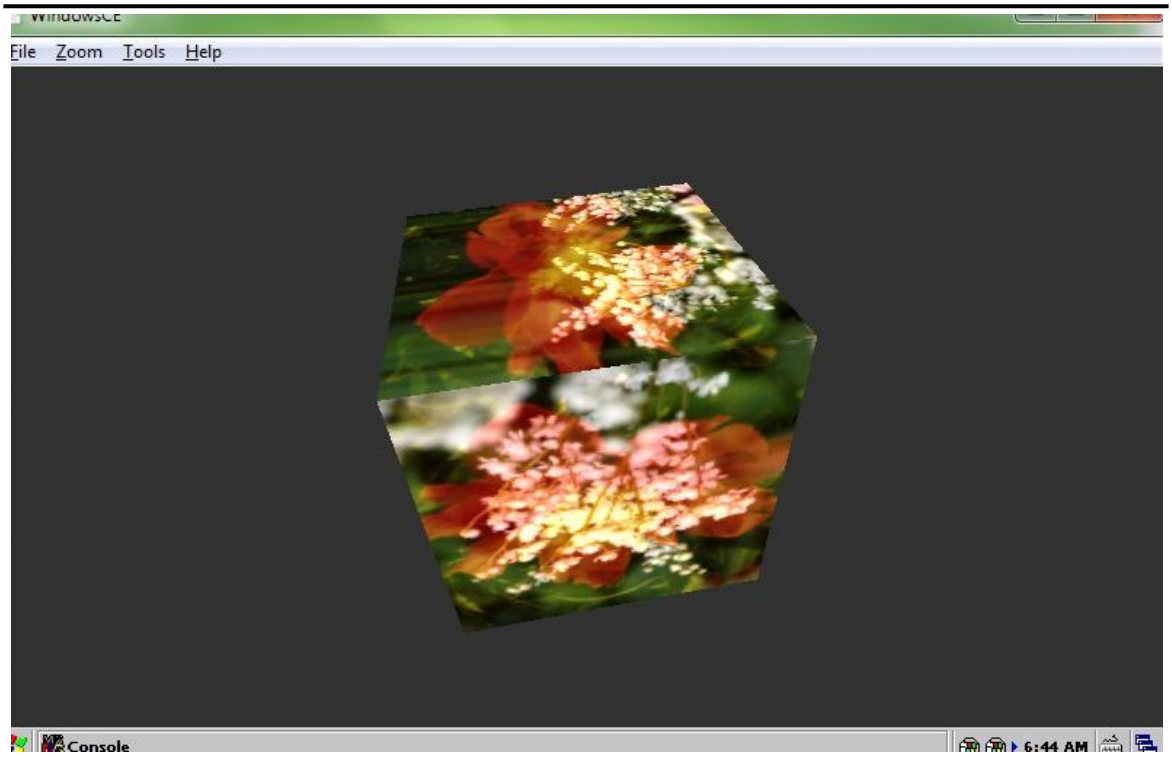

Figure 46: SATA disk

3) The above screen shot shows the running of Open GL application on iW-G15 platform.

Open VG application

1) Go to “My device->Windows” following screen will appear.

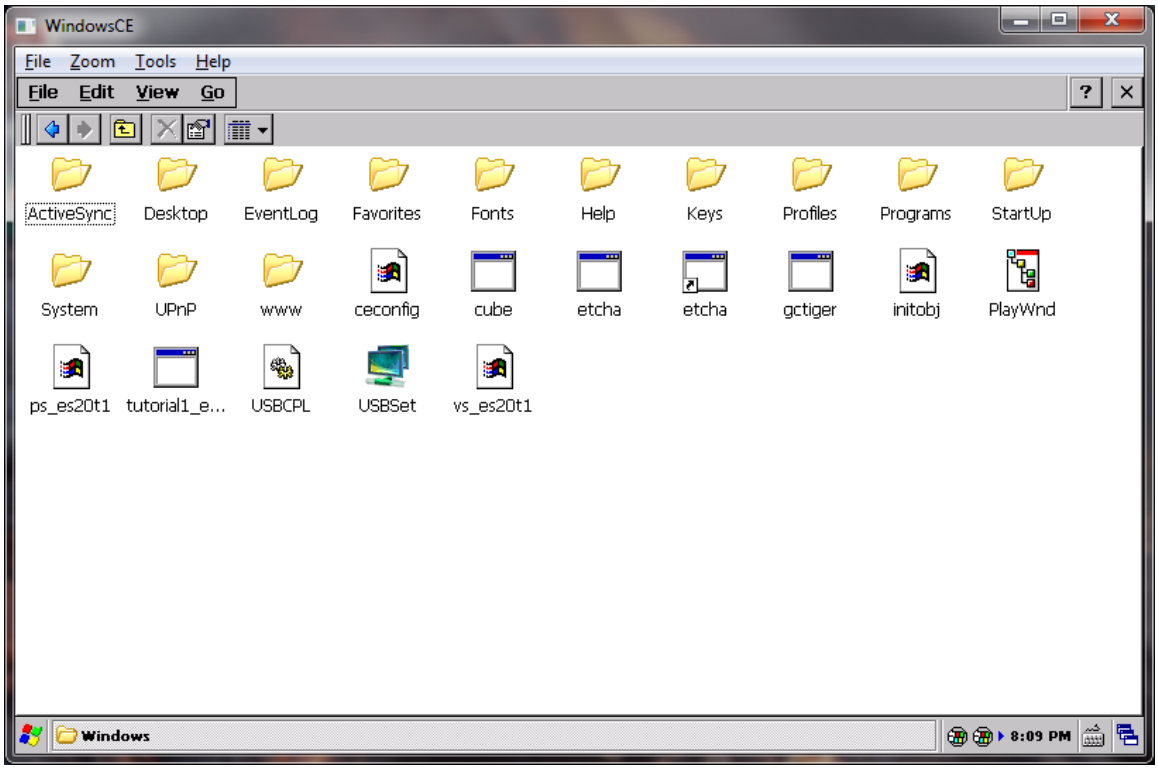

Figure 47: SATA disk

2) Locate “gctiger” application and double click on it. It will run the application.

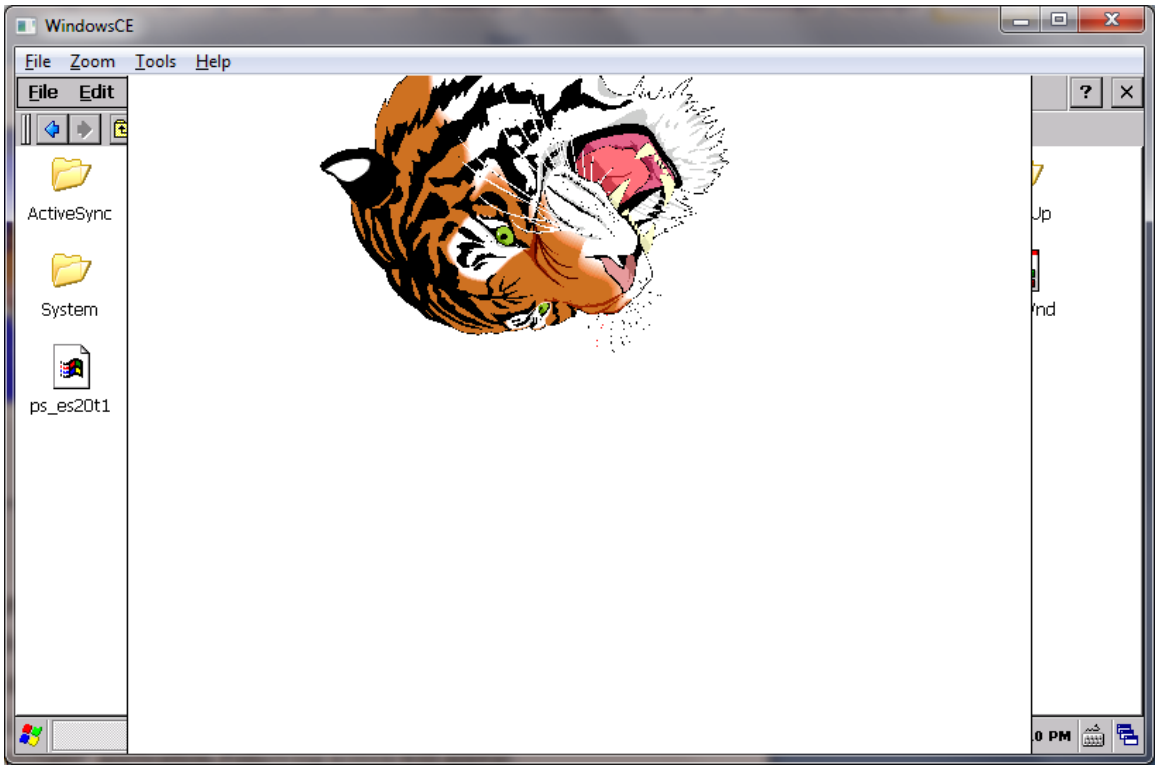

Figure 48: SATA disk

4.2. Silverlight application on iW-G15

1) First copy the “Silverlight” application from the

   \Deliverables\Software\Binaries\WinCE Application

   to any of the media in iW-G15 board.
2) Double click on the “Silverlight” application. Following screen will appear.
3) Click button ‘A’ to enter the character ‘a’ and click “<-“ to clear the letter ‘a’ and click button ‘c’ to close the application.

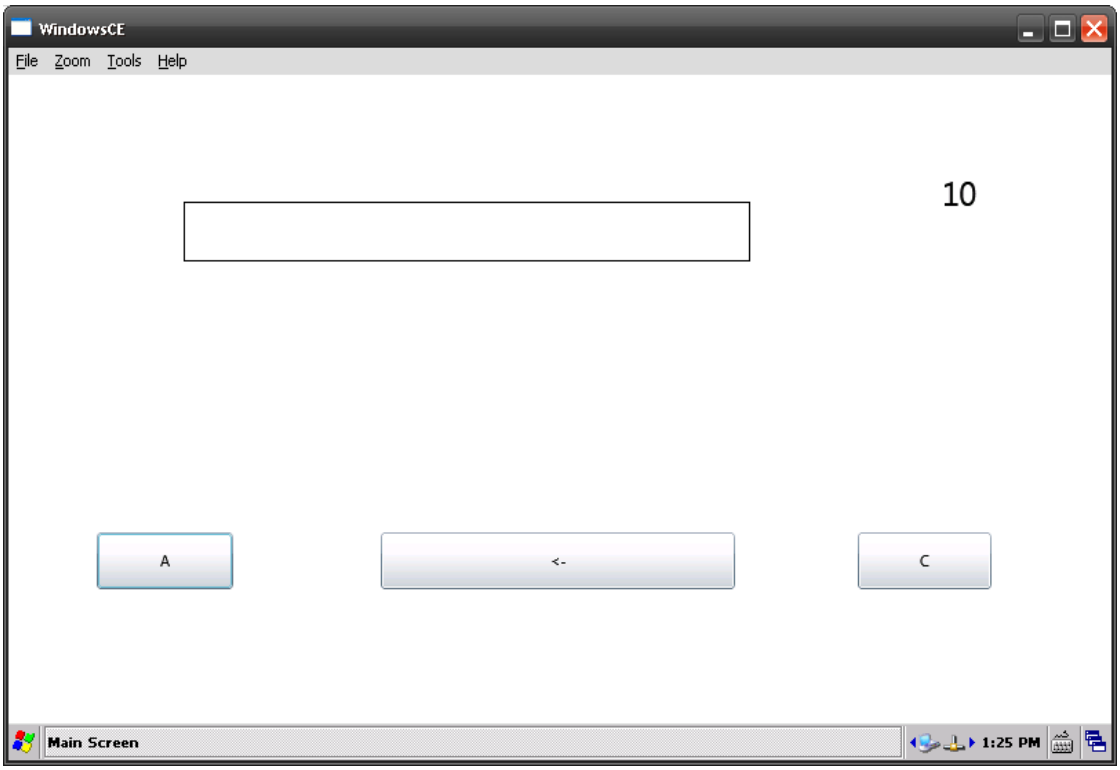

Figure 49: Silverlight application

4.3. Video playback

1) First copy the iWave given .WMV files from the path **\Deliverables\Software\Sample_Videos** to any media or desktop of the iW-G15 board.
2) Double click on the .WMV file to play the video. Following screen shot will appear when the video file is playing.

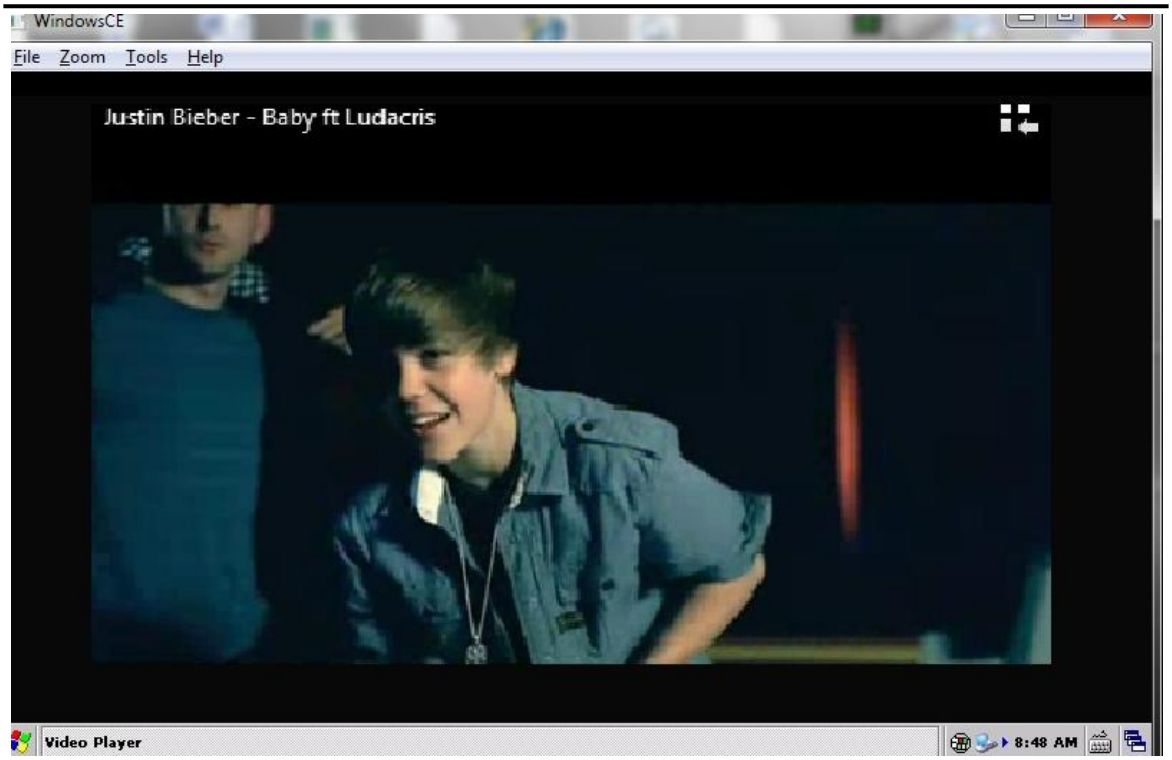

Figure 50: Video window

5. Development Environment

5.1. MSI Installation

Requirements for the MSI Installation:

1) Windows XP/Vista/7 host PC
2) Visual Studio 2008
3) Windows Embedded Compact 7

Installation procedure

1) First open the folder containing the MSI file and cab file given by the iWave from the path **\Deliverables\Software\MSI_Binary\ iWave_G15_MSI_Binary.msi**,

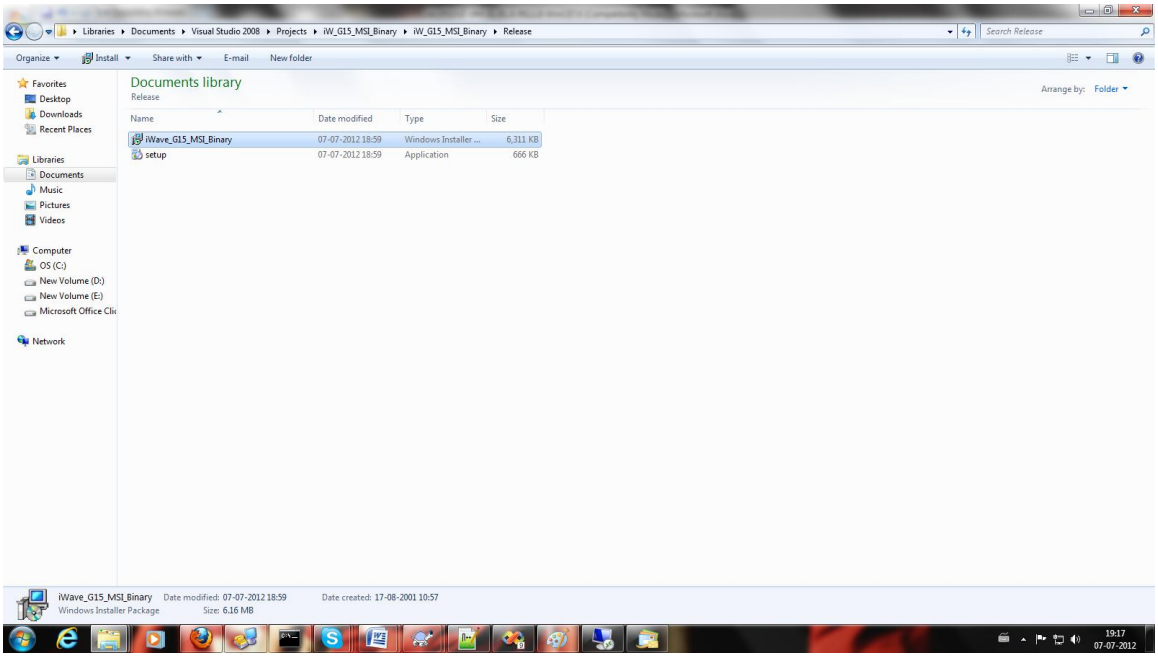

Figure 51: iWave's MSI folder

2) Double click on the MSI file provided and the following screen will appear as shown in the snap shot.

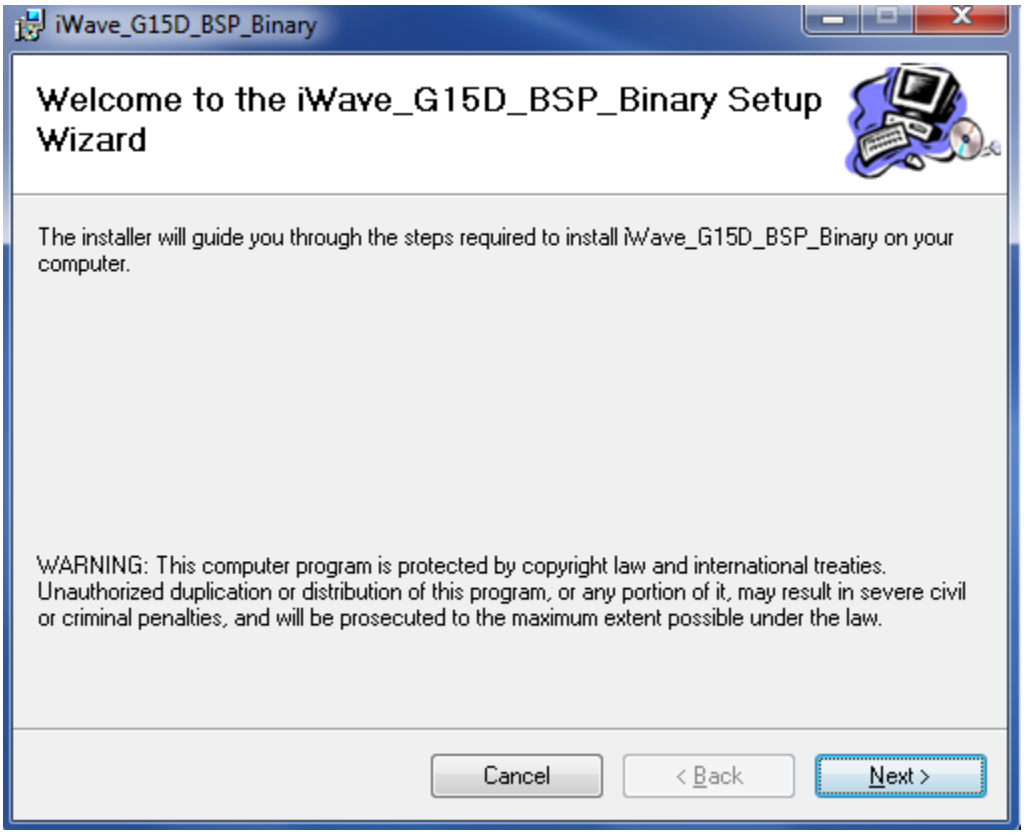
iWave_G15D_BSP_Binary
Welcome to the iWave_G15D_BSP_Binary Setup Wizard
The installer will guide you through the steps required to install iWave_G15D_BSP_Binary on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

Figure 52: MSI installation binary setup

3) Just click “Next” and the following snap shot will appear.

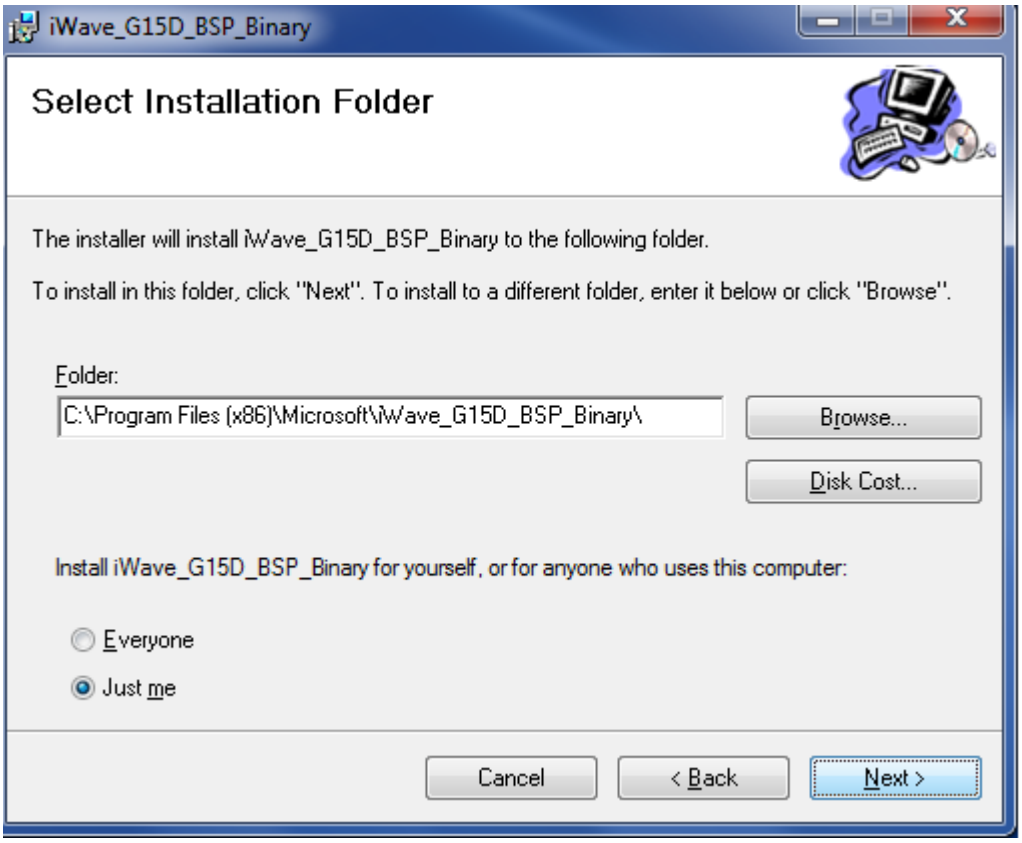
iWave_G15D_BSP_Binary
Select Installation Folder
The installer will install iWave_G15D_BSP_Binary to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files (x86)\Microsoft\iWave_G15D_BSP_Binary\
Browse...
Disk Cost...
Install iWave_G15D_BSP_Binary for yourself, or for anyone who uses this computer:
Everyone
Just me
Cancel
< Back
Next >

Figure 53: Select folder to install the MSI

4) Specify the path as Drive/WINCE700/ to install the MSI as shown in the following screen shot and click “Next”.

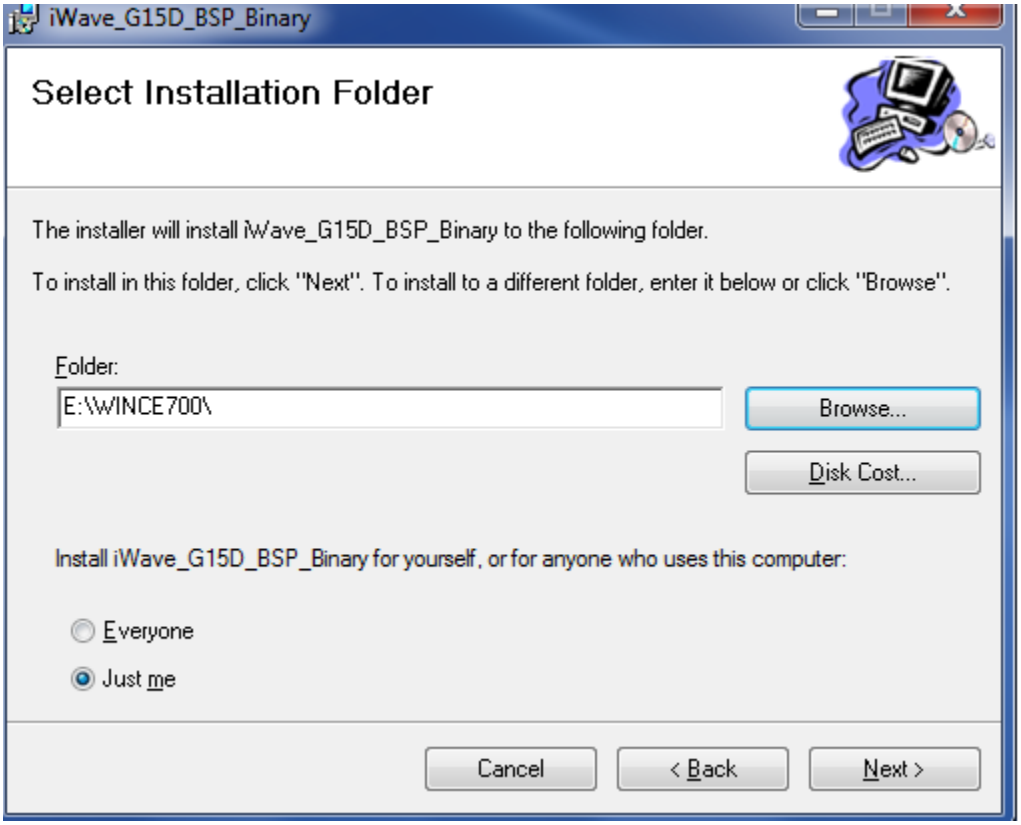
iWave_G15D_BSP_Binary
Select Installation Folder
The installer will install iWave_G15D_BSP_Binary to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
E:\WINCE700\
Browse...
Disk Cost...
Install iWave_G15D_BSP_Binary for yourself, or for anyone who uses this computer:
Everyone
Just me
Cancel
< Back
Next >

Figure 54: Changed the folder

5) Click “Next” and the following screen will appear.

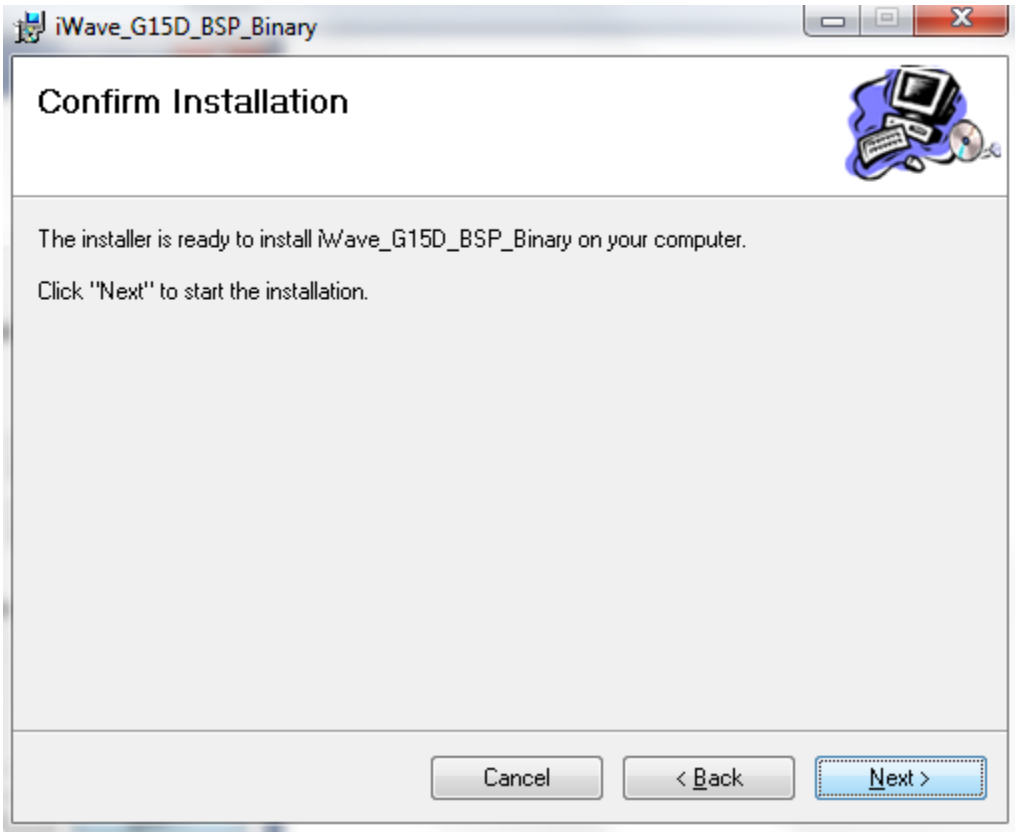
iWave_G15D_BSP_Binary
Confirm Installation
The installer is ready to install iWave_G15D_BSP_Binary on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

Figure 55: Confirming the installation

6) Just click “Next” to confirm the installation of the MSI.

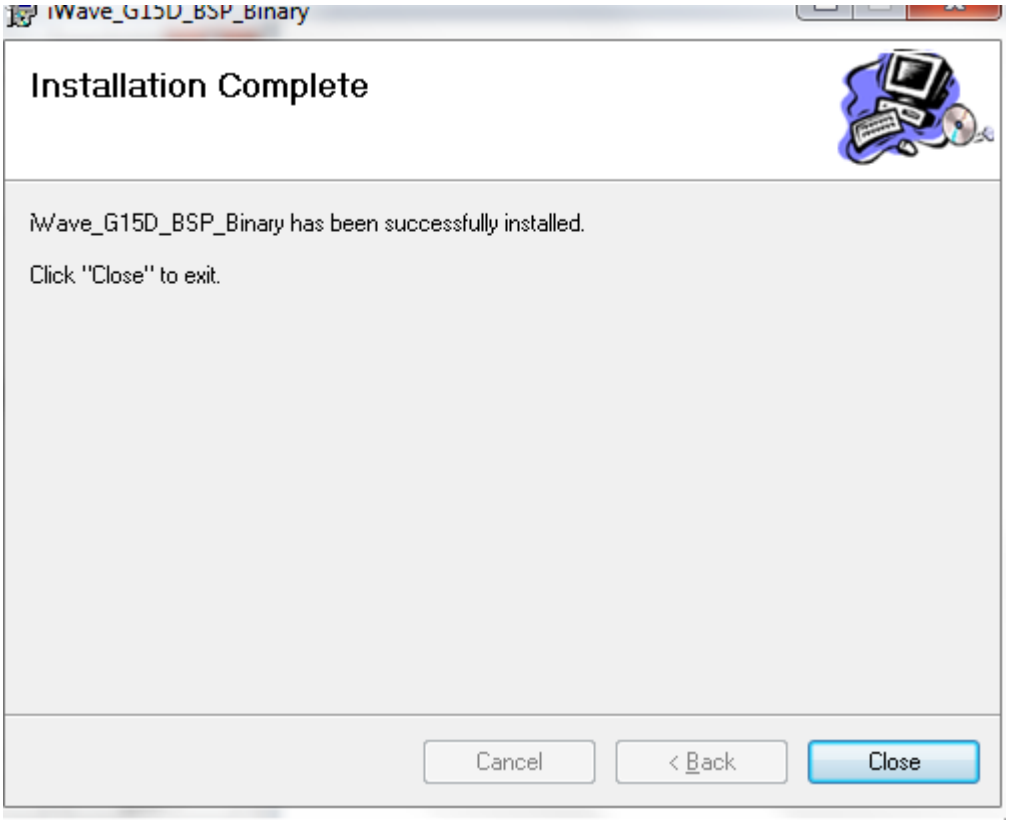

Figure 56: Installation complete

5.2. Configuring the OS image

1) Use the Platform Builder to select one of the two default build configurations provided in the BSP sample solution. These configurations control the type of OS image (debug or release) that is generated by the Platform Builder tools.
2) In addition, the build configuration encapsulates all of the platform environment variables and custom build instructions that are used during OS image creation.
3) This section describes the configuration options available for the i.MX6Q BSP.

5.2.1. Image Build Type

1) The type of OS image generated by Platform Builder can be controlled using the Build > Configuration Manager... menu item and choosing the appropriate Active Solution Configuration item from the drop-down list.
2) The sample workspace provided with the i.MX6Q BSP provides the following three image build types:

• Freescale i_MX6Q SABREAuto ARMV7 Release—Retail build that includes KITL and kernel debugger support. This image type provides a smaller image with faster execution at the expense of limited debug capability.

• Freescale i_MX6Q SABREAuto ARMV7 Debug—Debug build that includes KITL and kernel debugger support. This image type provides full debug capability at the expense of a larger image size and slower execution.

• Freescale i_MX6Q SABREAuto ARMV7 Checked—Checked build that includes KITL and kernel debugger support. These image types provide richer check and debug capability at the expense of a larger image size and slower execution.

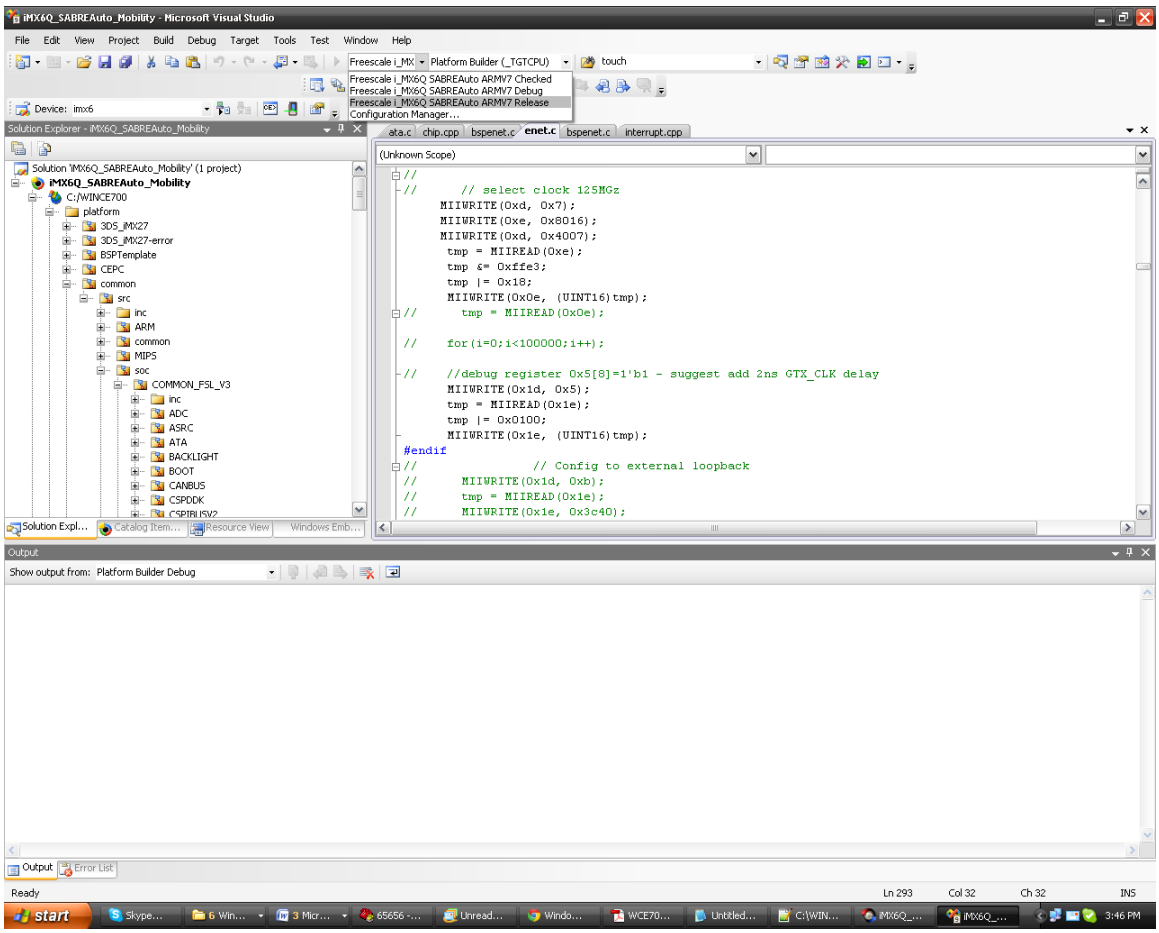

Figure 57: Image build type changing

NOTE

The Standard toolbar can enable or disabled by selecting the Tools > Customize... menu item followed by the Toolbars tab and then select or deselect the standard toolbar item.

5.2.2. BSP Environment Variables

There are three types of BSP environment variables used to configure the BSP:

- BSP_NOXXX
- BSP_XXX
- IMGXXX

• BSP_NOXXX Variables:

The i.MX6Q BSP supports the Windows Embedded Compact 7 dependency feature, which simplifies the BSP configuration process. Support for this feature means that the selection of certain SYSGEN components in the workspace (for example SYSGEN_SMARTCARD) triggers the automatic selection of certain BSP drivers (for example SIM). The drivers that have a SYSGEN dependency have a corresponding BSP_NOXXX variable defined in the platform batch file listed below. These variables Provide a means for excluding a driver from the OS image that might otherwise be included, due to a SYSGEN dependency.

WINCE700\platform\iMX6Q_SABREAuto\iMX6Q_SABREAuto.bat

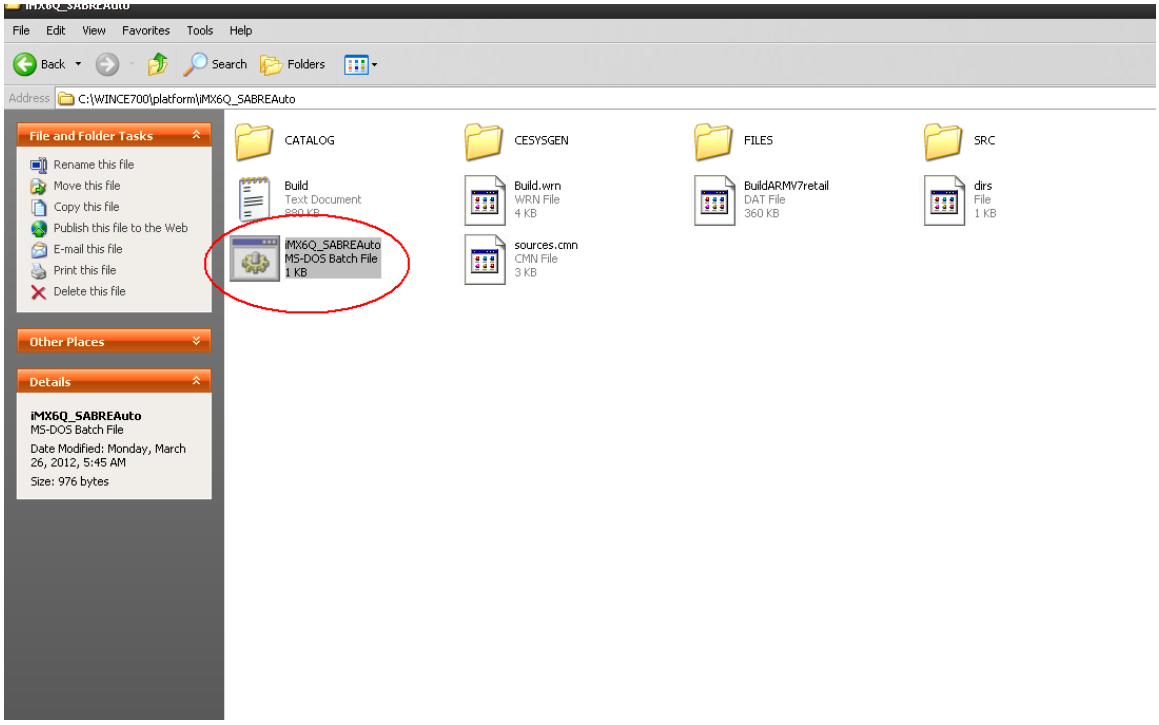

Figure 58: BSP_NOXXX variables

• BSP_XXX Variables:

The i.MX6Q BSP uses the BSP_XXX variables defined in the catalog to configure the drivers that cannot be automatically be selected by SYSGEN dependency. In these cases,

users can use the Platform Builder Catalog UI to select or deselect drivers by clicking the catalog items.

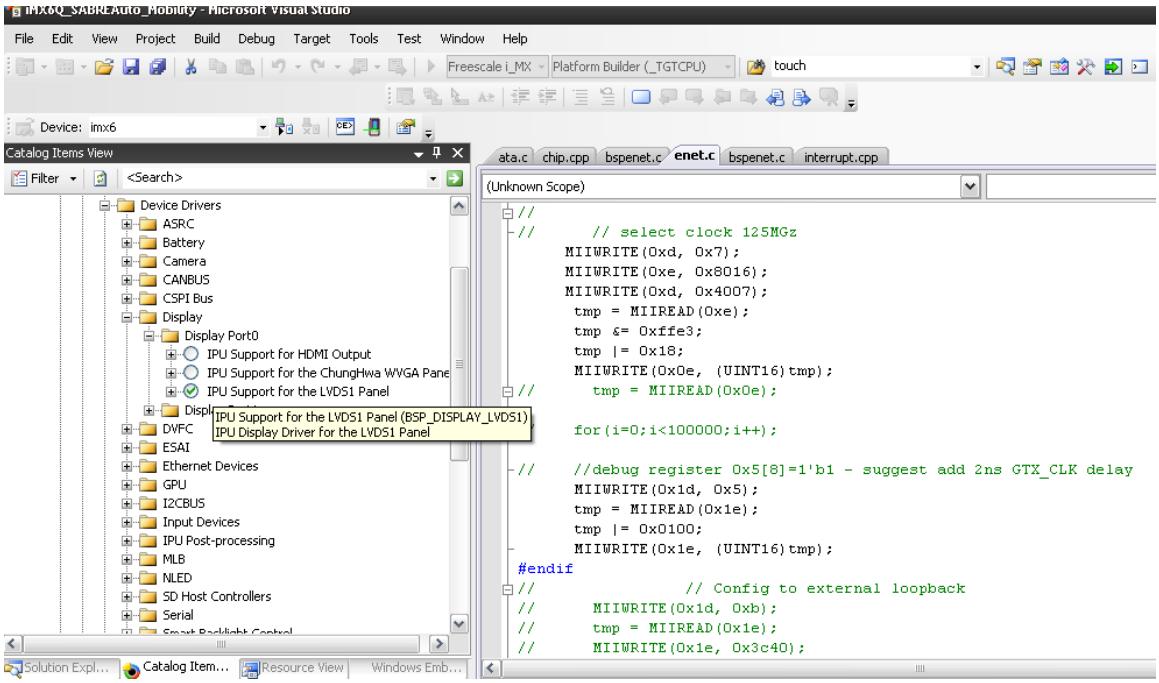

Figure 59: BSP_XXX variables

Another method to add the BSP_XXX variables is as follows.
1. Open the sample solution for the i.MX6Q BSP.
2. From the Project menu, choose Properties.
3. Expand Configuration Properties if necessary and select the Environment item.

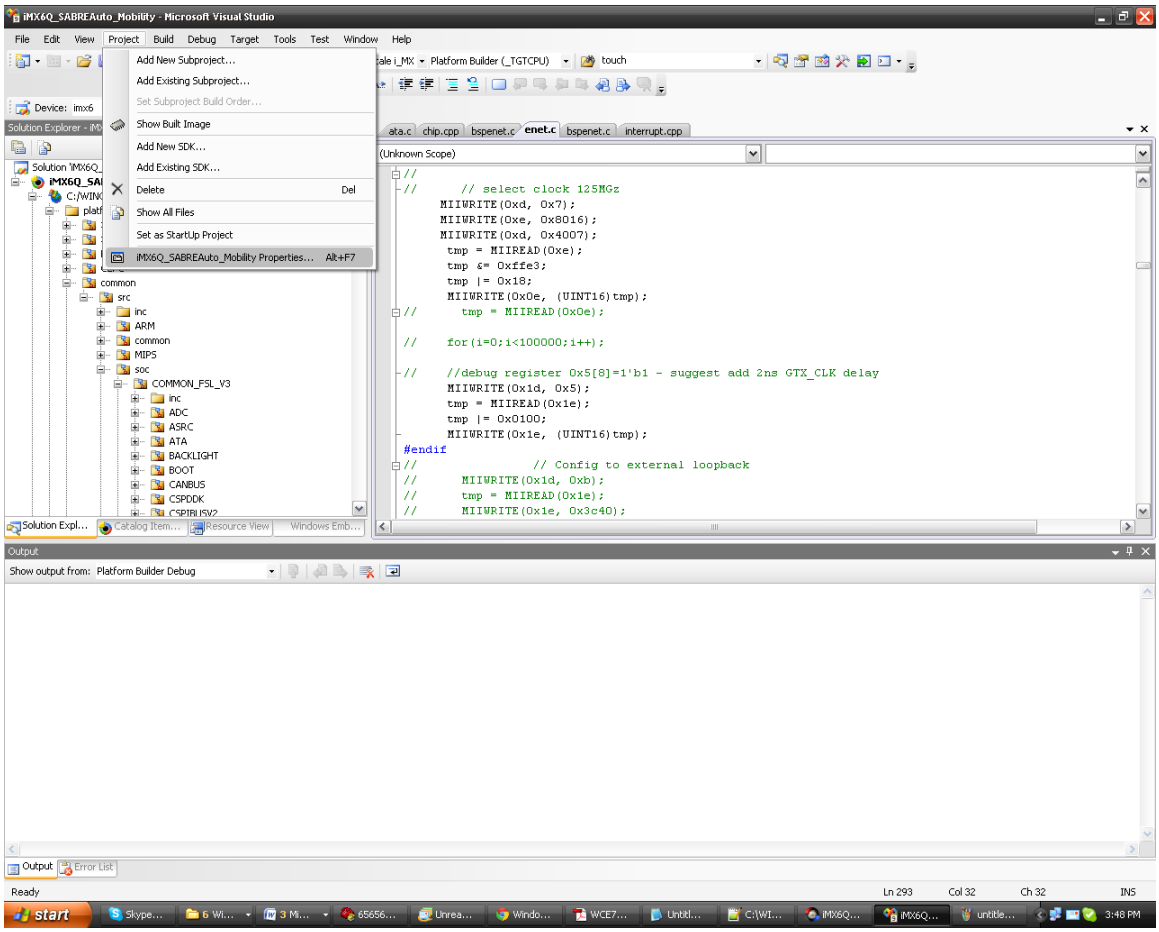

Figure 60: Platform builder window for properties

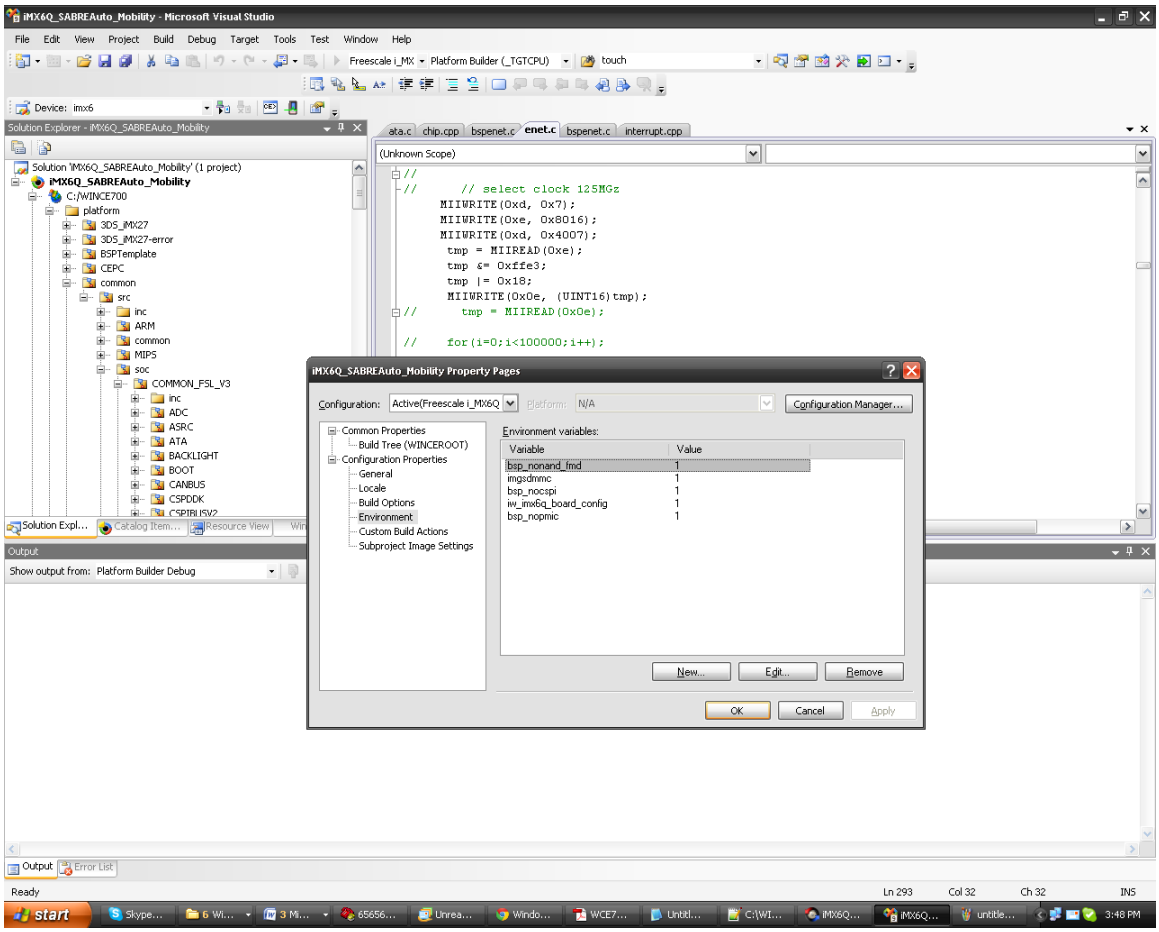

Figure 61: Project properties window (contd)

• IMGXXX Variables

The IMG_XXX variables are used to control the Make Run-Time Image procedure. The variables can be viewed and configured within the Environment dialog as follows:

1. Open the sample solution for the i.MX6Q BSP.
2. From the Project menu, choose Properties.
3. Expand Configuration Properties if necessary and select the Environment item.

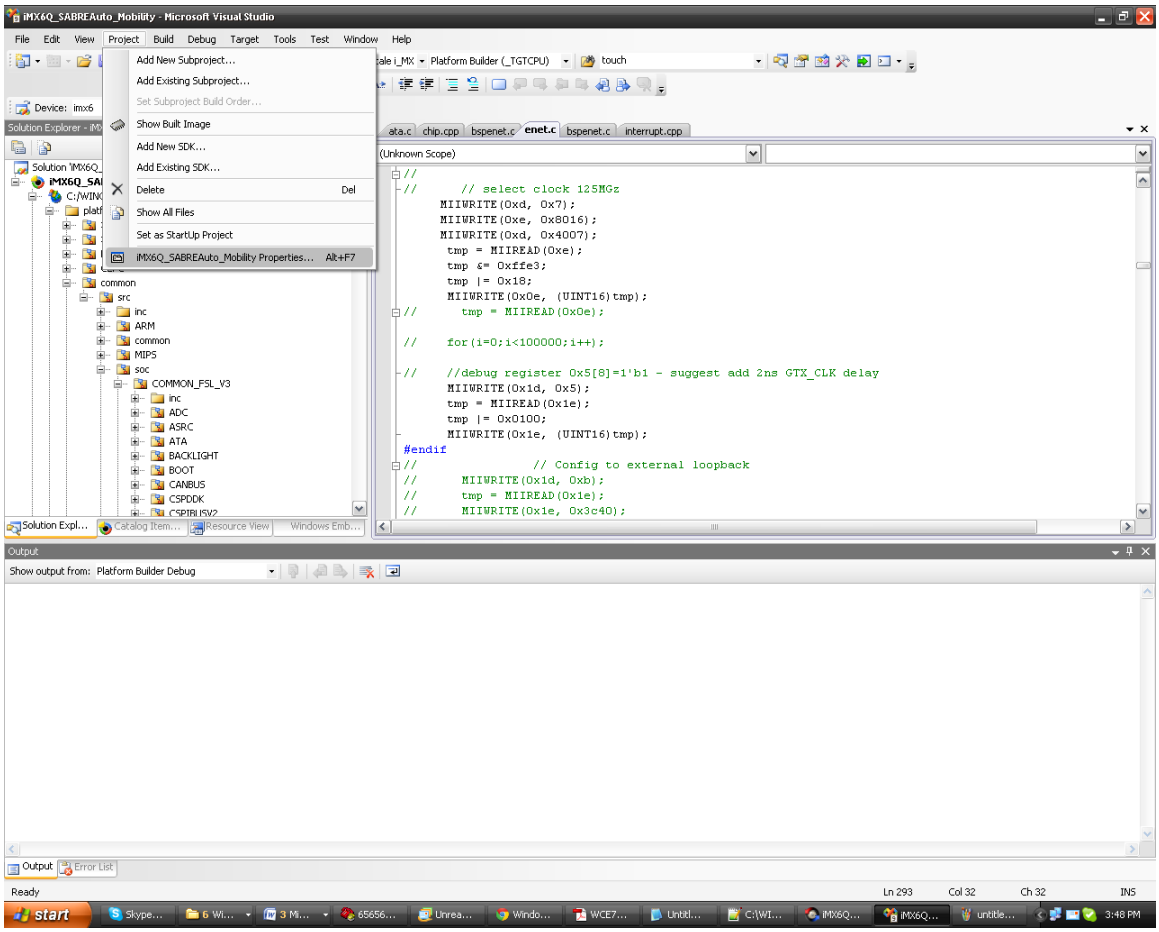

Figure 62: Project properties window for IMG

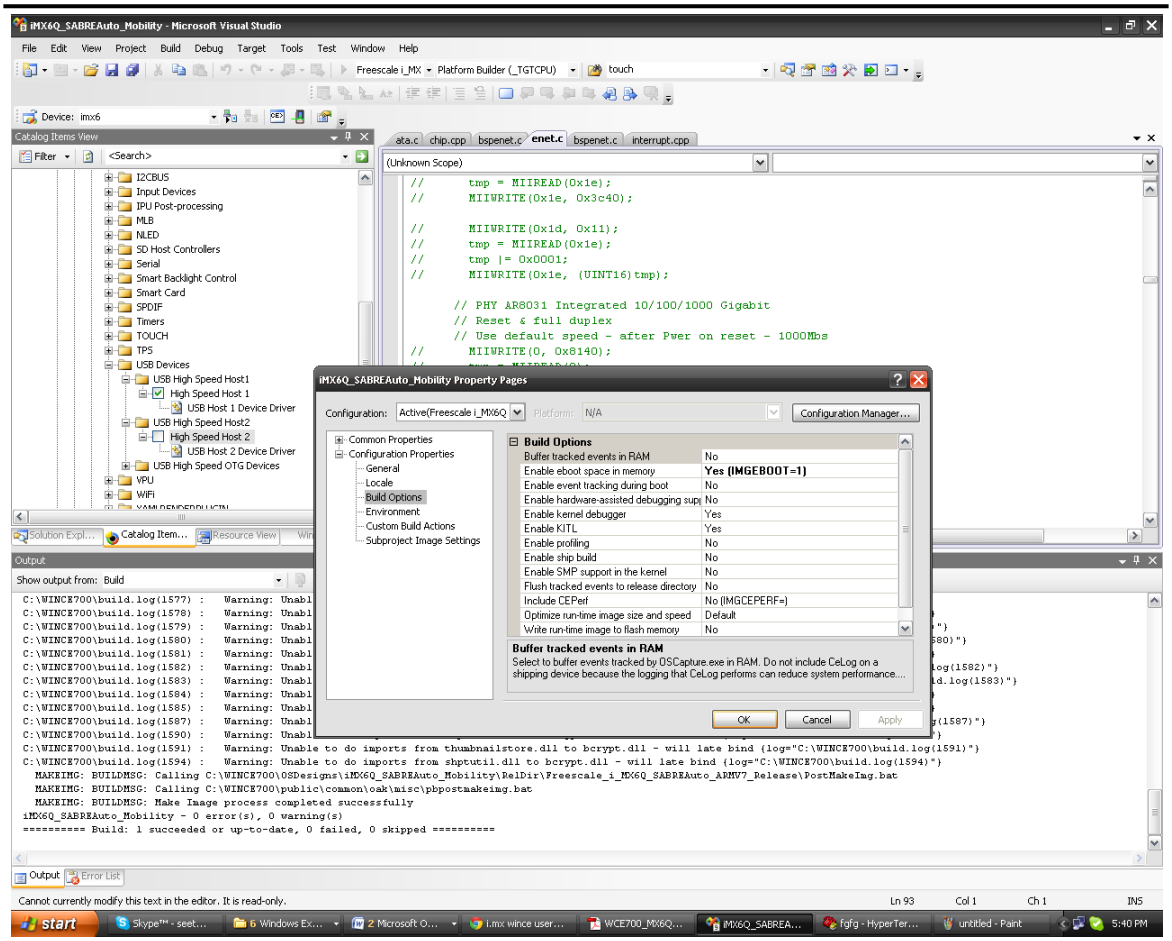
iMX6Q_SABREAuto_Mobility - Microsoft Visual Studio
iMX6Q_SABREAuto_Mobility Property Pages
Build Options
Buffer tracked events in RAM
Enable eboot space in memory
Yes (IMGEBOOT=1)
Buffer tracked events in RAM
Select to buffer events tracked by OSCapture.exe in RAM. Do not include CeLog on a shipping device because the logging that CeLog performs can reduce system performance....
OK
Cancel
Apply

Figure 63: Project properties window for IMG (contd)

5.3. Building the OS image

1) Once the installation of the MSI is finished go to Drive\WINCE700\osdesigns->iMX6Q_SABREAuto_Mobility and double click on iMX6Q_SABREAuto_Mobility file. It will open the workspace for the image creation.

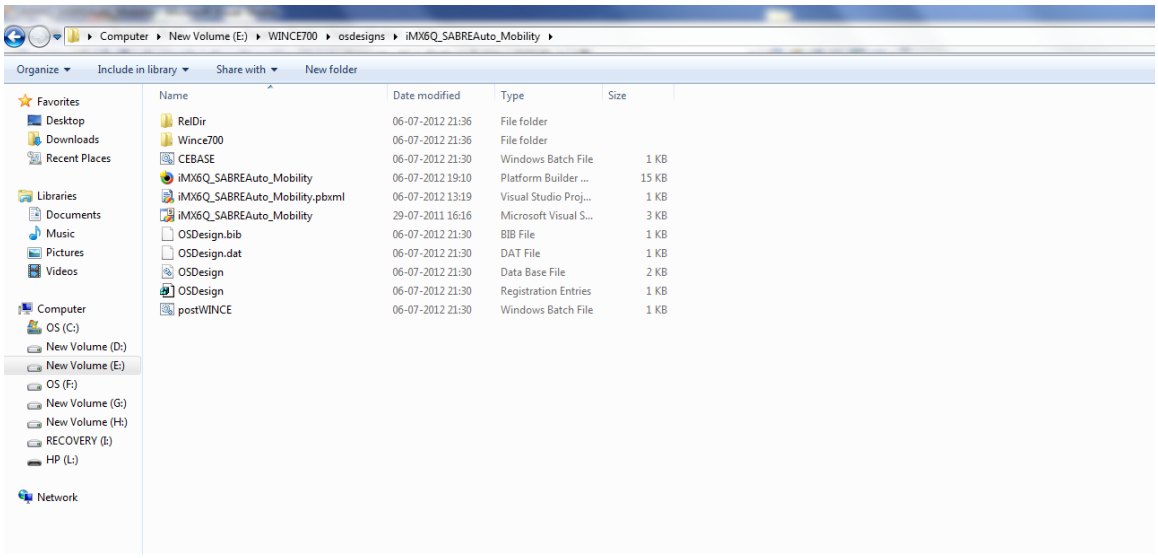

Figure 64: Folder with pbxml file

2) Once the iMX6Q_SABREAuto_Mobility file it looks like below snap shot.

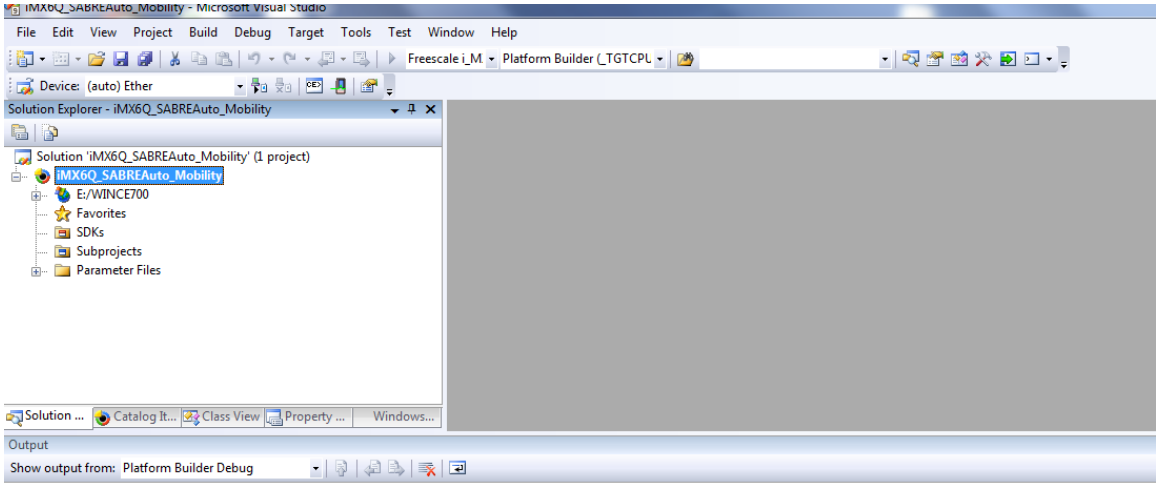

Figure 65: Platform builder window

3) Now go to “Build” main menu and select “**Sysgen**” as follows. By default LCD image will be built.

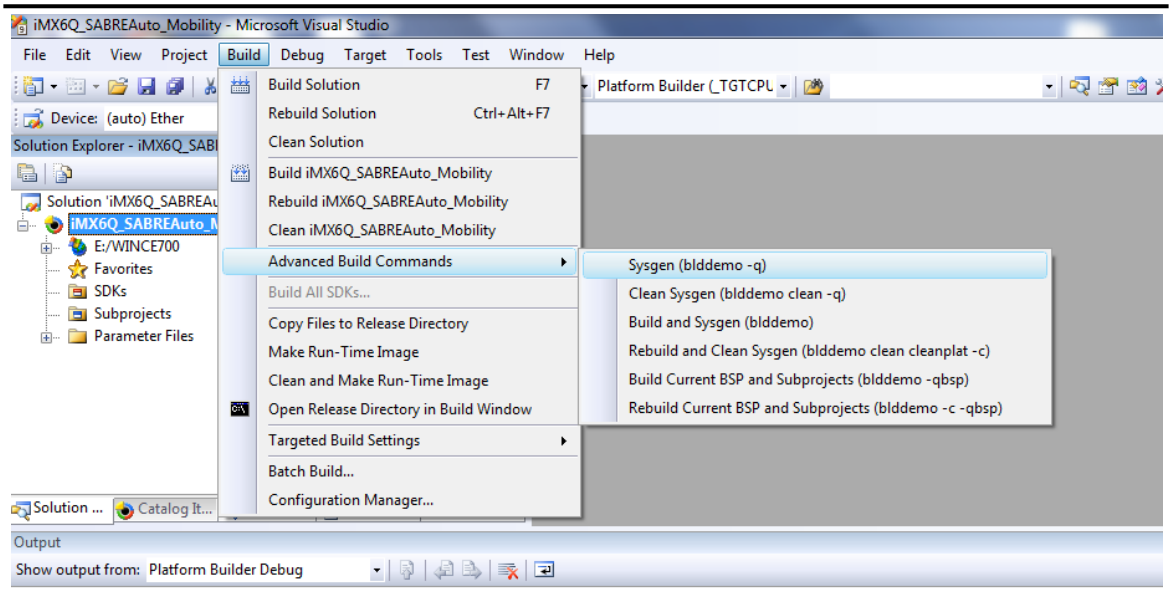

Figure 66: Building for first time

4) The build process will start. The platform builder will look like the following screen shot.

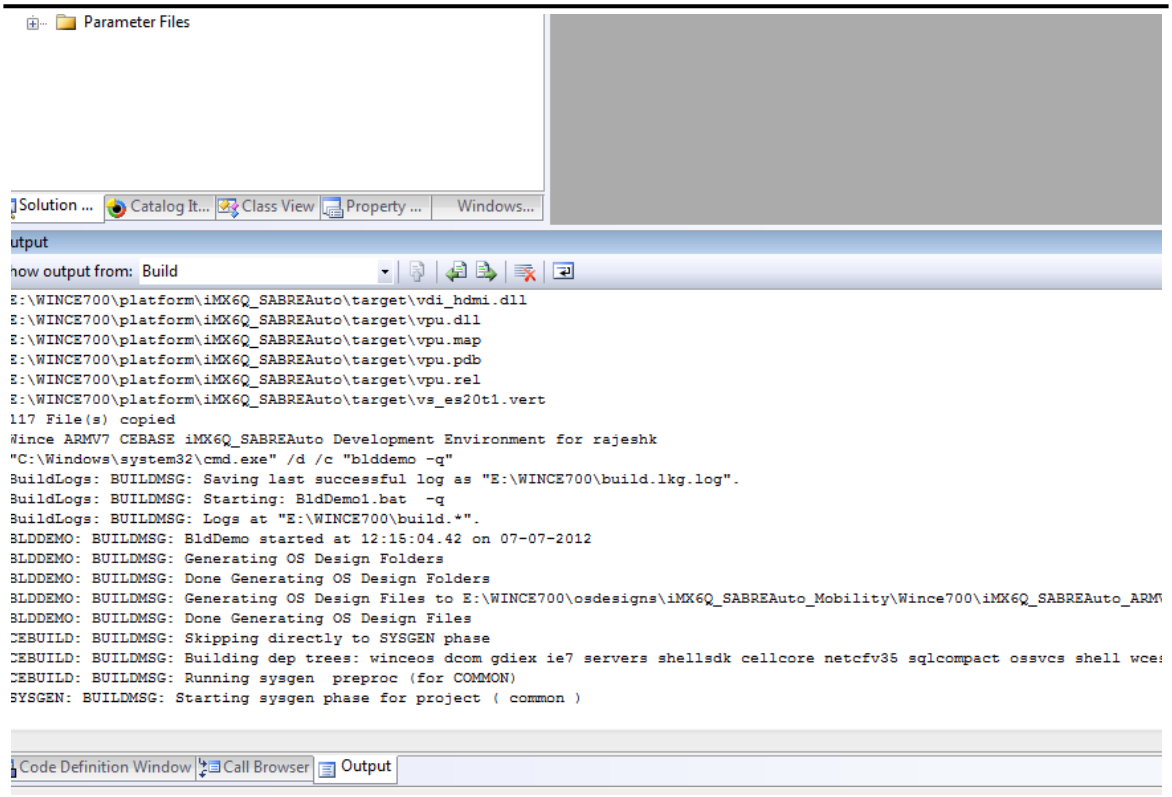
Parameter Files
Solution ...
Catalog It...
Class View
Property ...
Windows...
utput
how output from: Build
E:\WINCE700\platform\iMX6Q_SABREAuto\target\vdi_hdmi.dll
E:\WINCE700\platform\iMX6Q_SABREAuto\target\vpu.dll
E:\WINCE700\platform\iMX6Q_SABREAuto\target\vpu.map
E:\WINCE700\platform\iMX6Q_SABREAuto\target\vpu.pdb
E:\WINCE700\platform\iMX6Q_SABREAuto\target\vpu.rel
E:\WINCE700\platform\iMX6Q_SABREAuto\target\vs_es20t1.vert
117 File(s) copied
Wince ARMV7 CEBASE iMX6Q_SABREAuto Development Environment for rajeshk
"C:\Windows\system32\cmd.exe" /d /c "blddemo -q"
BuildLogs: BUILDMSG: Saving last successful log as "E:\WINCE700\build.lkg.log".
BuildLogs: BUILDMSG: Starting: BldDemo1.bat -q
BuildLogs: BUILDMSG: Logs at "E:\WINCE700\build.*".
BLDDEMO: BUILDMSG: BldDemo started at 12:15:04.42 on 07-07-2012
BLDDEMO: BUILDMSG: Generating OS Design Folders
BLDDEMO: BUILDMSG: Done Generating OS Design Folders
BLDDEMO: BUILDMSG: Generating OS Design Files to E:\WINCE700\osdesigns\iMX6Q_SABREAuto_Mobility\Wince700\iMX6Q_SABREAuto_ARM
BLDDEMO: BUILDMSG: Done Generating OS Design Files
CEBUILD: BUILDMSG: Skipping directly to SYSGEN phase
CEBUILD: BUILDMSG: Building dep trees: winceos dcom gdiex ie7 servers shellsdk cellcore netcfv35 sqlcompact ossvcs shell wce
CEBUILD: BUILDMSG: Running sysgen preproc (for COMMON)
SYSGEN: BUILDMSG: Starting sysgen phase for project (common)
Code Definition Window
Call Browser
Output

Figure 67: Build started

5) For the first time build errors will be thrown in the make image process. Select Build-> Copy files to release directory.

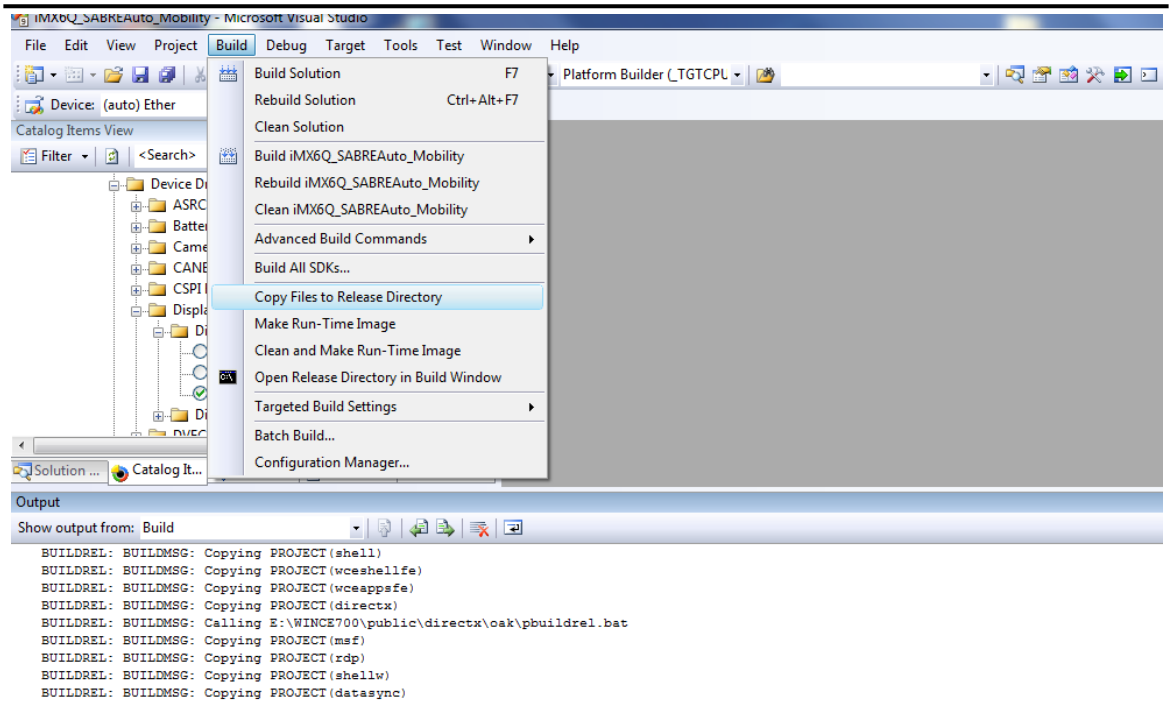

Figure 68: Copy files to release diretory

6) Then click on Build->make run-time image.

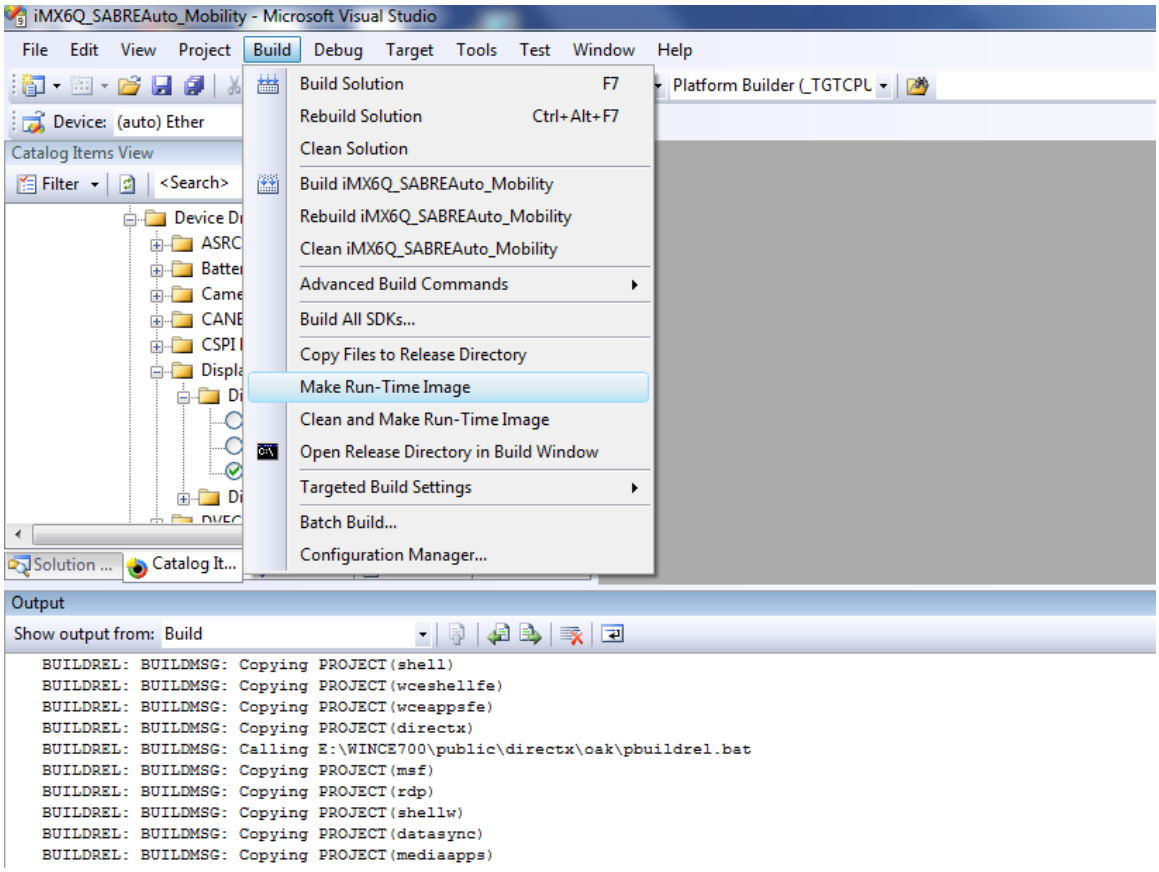

Figure 69: Make run-time image

7) Once the build is over the image will generated in the release directory.

8) The LCD image will be generated in the folder Drive: \WINCE700\osdesigns\iMX6Q_SABREAuto_Mobility\RelDir\Freescale_i_MX6Q_SABREAuto_ARMV7_Release directory.

9) For HDMI image select “IPU support for HDMI output” in catalog items as shown below.

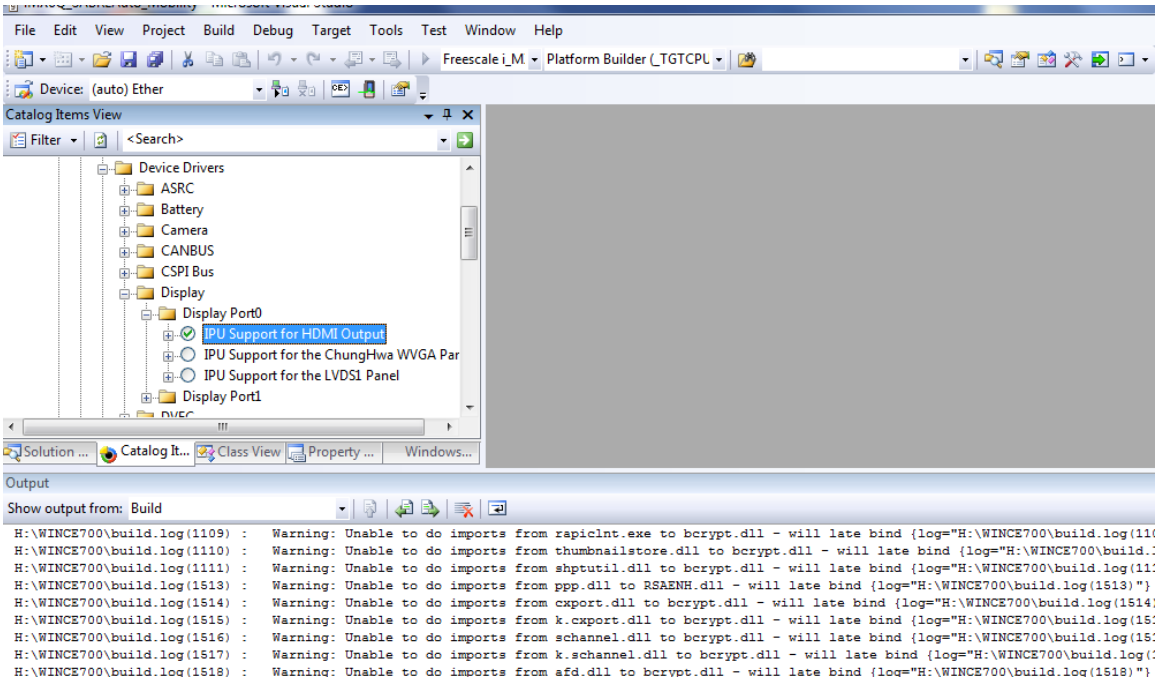
File Edit View Project Build Debug Target Tools Test Window Help
Device: (auto) Ether
Catalog Items View
Filter
<Search>
Device Drivers
ASRC
Battery
Camera
CANBUS
CSPI Bus
Display
Display Port0
IPU Support for HDMI Output
IPU Support for the ChungHwa WVGA Par
IPU Support for the LVDS1 Panel
Display Port1
Solution ...
Catalog It...
Class View
Property ...
Windows...
Output
Show output from: Build
H:\WINCE700\build.log(1109) : Warning: Unable to do imports from rapiclnt.exe to bcrypt.dll - will late bind {log="H:\WINCE700\build.log(11
H:\WINCE700\build.log(1110) : Warning: Unable to do imports from thumbnailstore.dll to bcrypt.dll - will late bind {log="H:\WINCE700\build.
H:\WINCE700\build.log(1111) : Warning: Unable to do imports from shptutil.dll to bcrypt.dll - will late bind {log="H:\WINCE700\build.log(11
H:\WINCE700\build.log(1513) : Warning: Unable to do imports from ppp.dll to RSAENH.dll - will late bind {log="H:\WINCE700\build.log(1513)"}
H:\WINCE700\build.log(1514) : Warning: Unable to do imports from cxport.dll to bcrypt.dll - will late bind {log="H:\WINCE700\build.log(1514
H:\WINCE700\build.log(1515) : Warning: Unable to do imports from k.cxport.dll to bcrypt.dll - will late bind {log="H:\WINCE700\build.log(15
H:\WINCE700\build.log(1516) : Warning: Unable to do imports from schannel.dll to bcrypt.dll - will late bind {log="H:\WINCE700\build.log(15
H:\WINCE700\build.log(1517) : Warning: Unable to do imports from k.schannel.dll to bcrypt.dll - will late bind {log="H:\WINCE700\build.log(
H:\WINCE700\build.log(1518) : Warning: Unable to do imports from afd.dll to bcrypt.dll - will late bind {log="H:\WINCE700\build.log(1518)"}

Figure 70: Select HDMI catalog item

10) Then go to build menu and select “advanced build options” and click “build current BSP and Subprojects”. It will show cross mark once clicked on it but still ok to proceed.

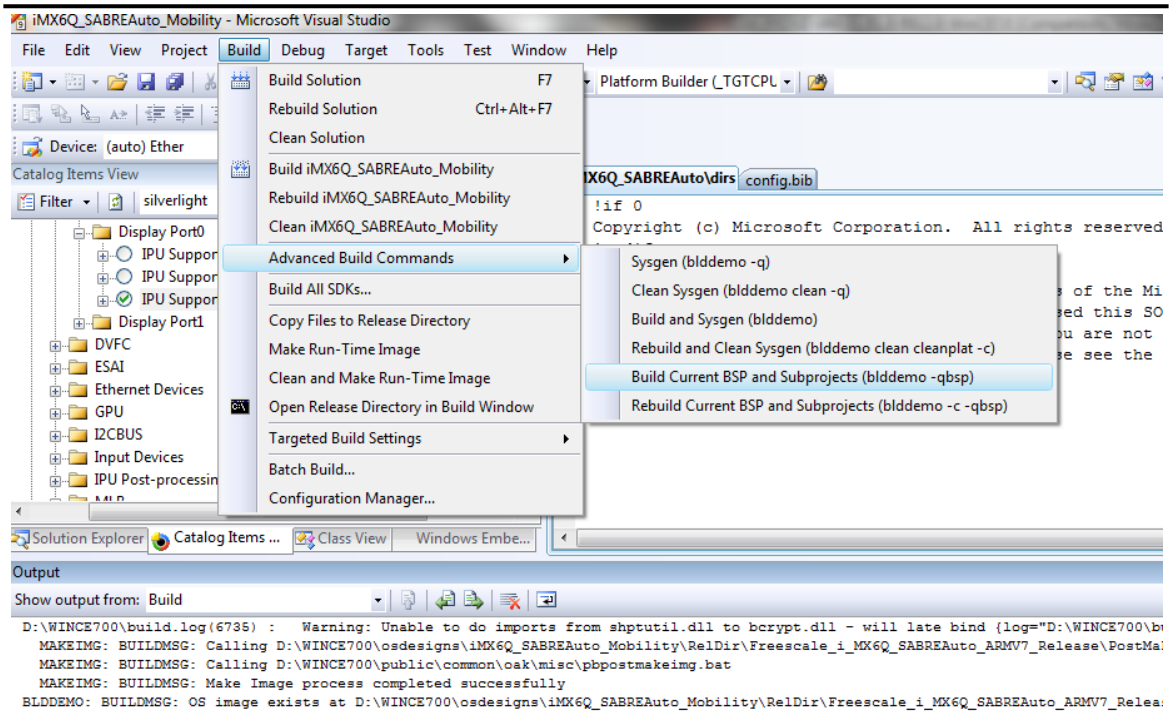
iMX6Q_SABREAuto_Mobility - Microsoft Visual Studio
File Edit View Project Build Debug Target Tools Test Window Help
Build Solution F7
Rebuild Solution Ctrl+Alt+F7
Clean Solution
Build iMX6Q_SABREAuto_Mobility
Rebuild iMX6Q_SABREAuto_Mobility
Clean iMX6Q_SABREAuto_Mobility
Advanced Build Commands
Build All SDKs...
Copy Files to Release Directory
Make Run-Time Image
Clean and Make Run-Time Image
Open Release Directory in Build Window
Targeted Build Settings
Batch Build...
Configuration Manager...
Sysgen (blddemo -q)
Clean Sysgen (blddemo clean -q)
Build and Sysgen (blddemo)
Rebuild and Clean Sysgen (blddemo clean cleanplat -c)
Build Current BSP and Subprojects (blddemo -qbsp)
Rebuild Current BSP and Subprojects (blddemo -c -qbsp)
Output
Show output from: Build
MAKEIMG: BUILDMSG: Calling D:\WINCE700\public\common\oak\misc\pbpostmakeimg.bat
MAKEIMG: BUILDMSG: Make Image process completed successfully

Figure 71: Build HDMI image

Enabling KITL and Kernel Debugger

1) KITL and Kernel debugger can be enabled if required for debugging before building the image as follows otherwise these steps can be ignored.
2) In platform builder, go to “Project” menu and select “iMX53_EVK_Mobility_Properties”.

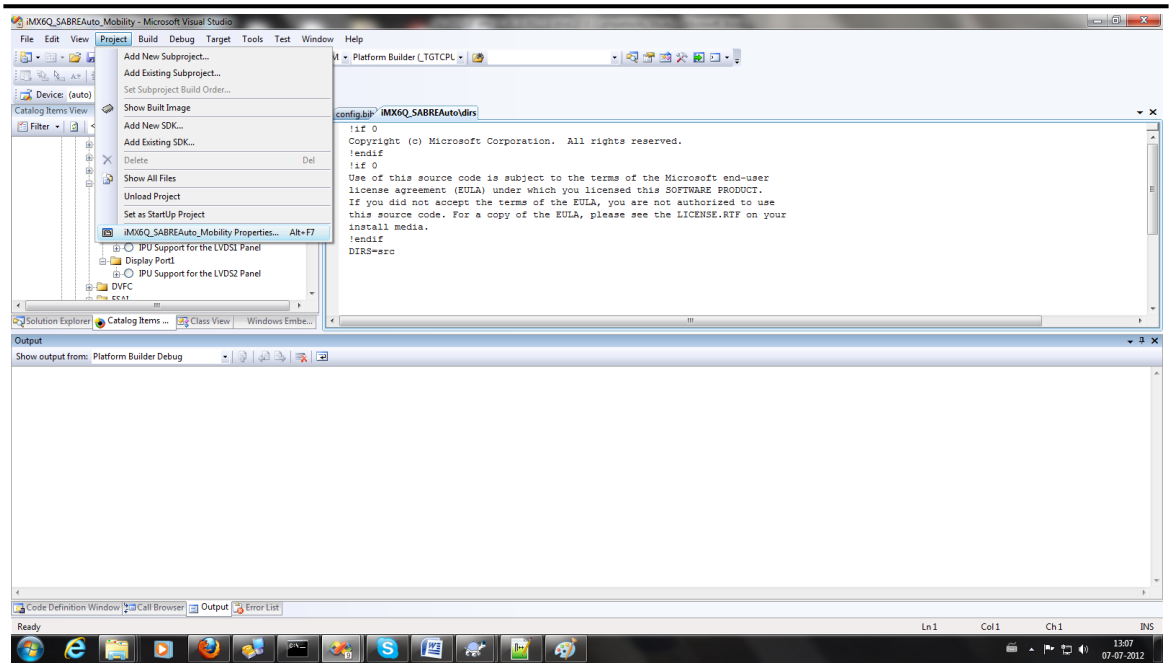
iMX6Q_SABREAuto_Mobility - Microsoft Visual Studio
File Edit View Project Build Debug Target Tools Test Window Help
Add New Subproject...
Add Existing Subproject...
Set Subproject Build Order...
Show Built Image
Add New SDK...
Add Existing SDK...
Delete
Show All Files
Unload Project
Set as StartUp Project
iMX6Q_SABREAuto_Mobility Properties... Alt+F7
Platform Builder (_TGTCPL
config.bib
iMX6Q_SABREAuto\dirs
!if 0
Copyright (c) Microsoft Corporation. All rights reserved.
!endif
!if 0
Use of this source code is subject to the terms of the Microsoft end-user
license agreement (EULA) under which you licensed this SOFTWARE PRODUCT.
If you did not accept the terms of the EULA, you are not authorized to use
this source code. For a copy of the EULA, please see the LICENSE.RTF on your
install media.
!endif
DIRS=src
Output
Show output from: Platform Builder Debug
Ready

Figure 72: Properties window of the project

3) Now expand “Configuration” and select “Build Options” as follows.

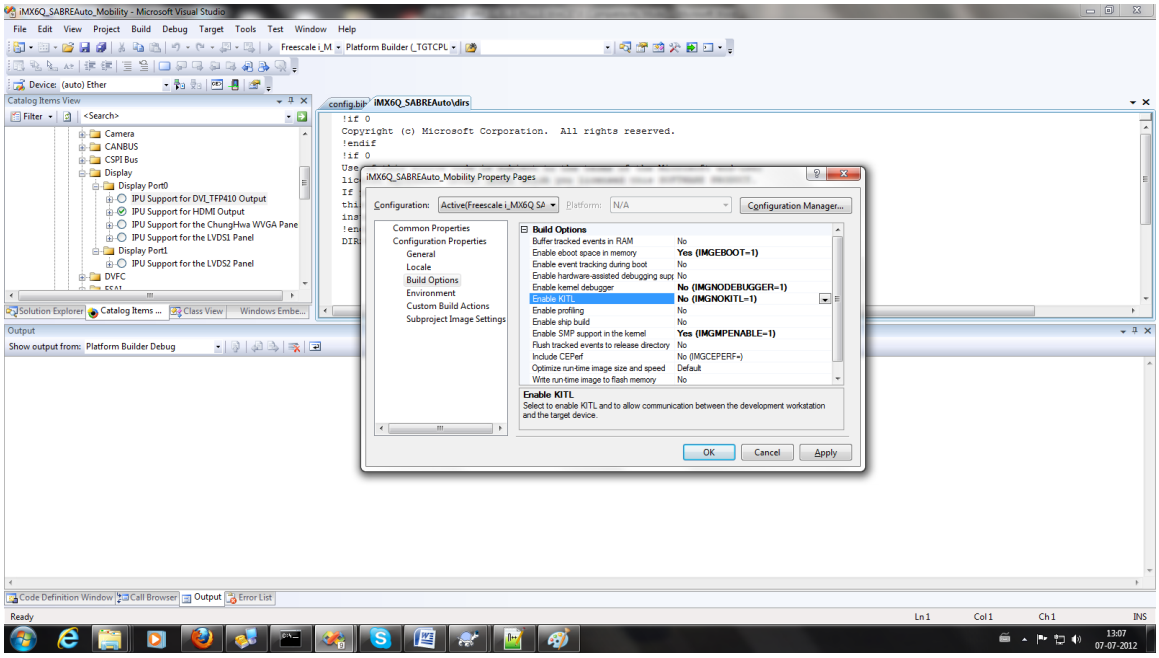
iMX6Q_SABREAuto_Mobility - Microsoft Visual Studio
iMX6Q_SABREAuto_Mobility Property Pages
Configuration: Active(Freescale i_MX6Q SA
Platform: N/A
Configuration Manager...
Common Properties
Configuration Properties
General
Locale
Build Options
Environment
Custom Build Actions
Subproject Image Settings
Build Options
Buffer tracked events in RAM No
Enable eboot space in memory Yes (IMGEBOOT=1)
Enable event tracking during boot No
Enable hardware-assisted debugging sup No
Enable kernel debugger No (IMGNODEBUGGER=1)
Enable KITL No (IMGNOKITL=1)
Enable profiling No
Enable ship build No
Enable SMP support in the kernel Yes (IMGMPENABLE=1)
Flush tracked events to release directory No
Include CEPerf No (IMGCEPERF=)
Optimize run-time image size and speed Default
Write run-time image to flash memory No
Enable KITL
Select to enable KITL and to allow communication between the development workstation and the target device.
OK
Cancel
Apply

Figure 73: Changing the state of KITL

4) Now click on second column of “**Enable kernel debugger**” and “**Enable KITL**”

and change them to “Yes” as shown below.

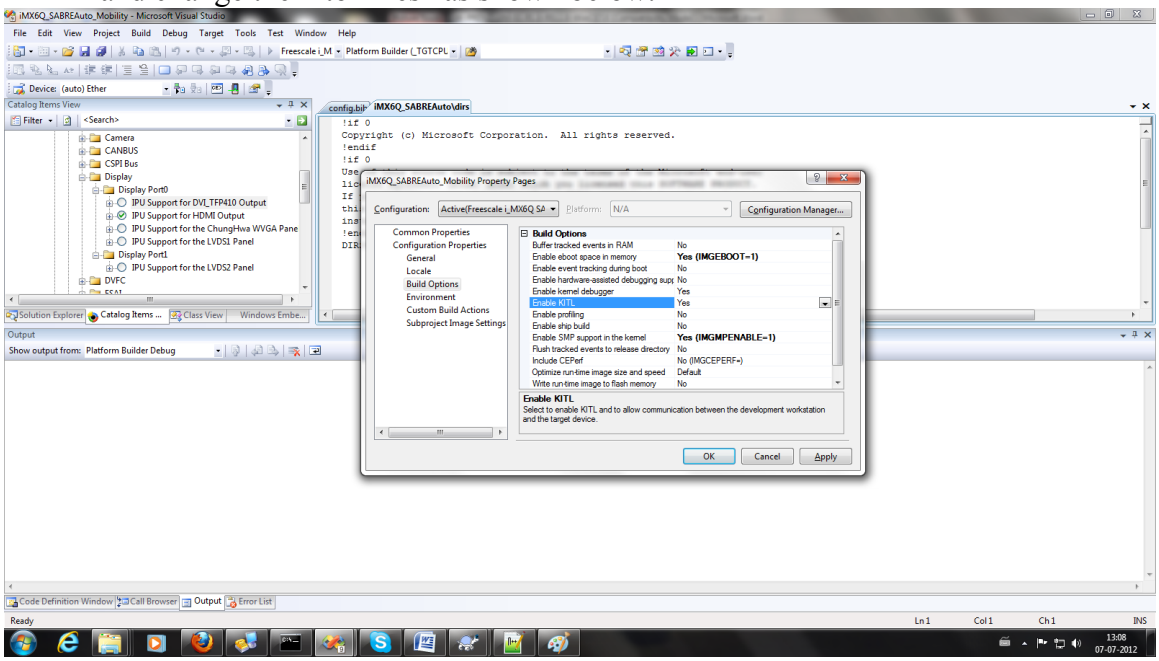

Figure 74: Changing the Kernel debuger

5) Now click “Apply” and click “OK”. And now your image will have KITL and debugger as you build the image using the same procedure explained above.

5.4. Flashing the binaries into SD/MMC of iW-G15 platform

5.4.1. Using CFIMAGER.exe tool

1) Connect the card reader with microSD card to the development PC.
2) Create a folder in C: drive and copy iWave given cfimager.exe, eboot.nb0 and NK.nb0 into that folder.
3) Open command prompt by typing “cmd” in Run.
4) Change the directory to the folder which has cfimager.exe, eboot.nb0 and NK.nb0.

Figure 75: Command prompt in host PC

5) Execute the following commands as shown in the snap shots.

   Cfimager –f eboot.nb0 –d L –imx53
   If it shows an error, change the above command as follows. i.e. Formatting the card and copying the image.
   Cfimager -always-format –f eboot.nb0 –d L –imx53
   Cfimager –f NK.nb0 –d L –imx53

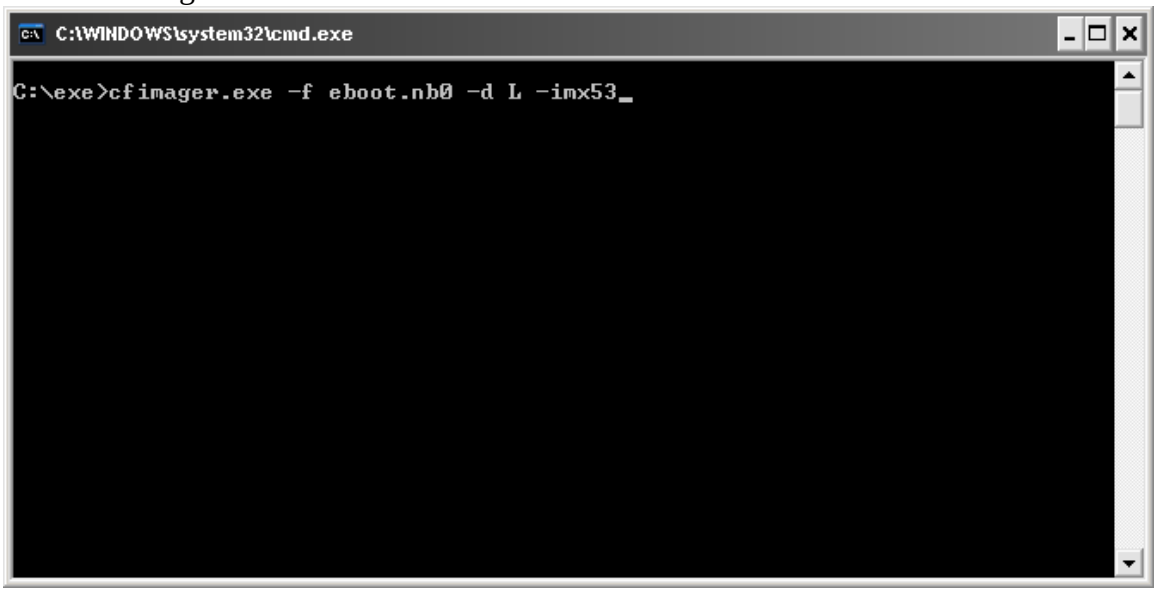

Figure 76: Cfimager for flashing eboot.nb0

6) The following screen will appear.

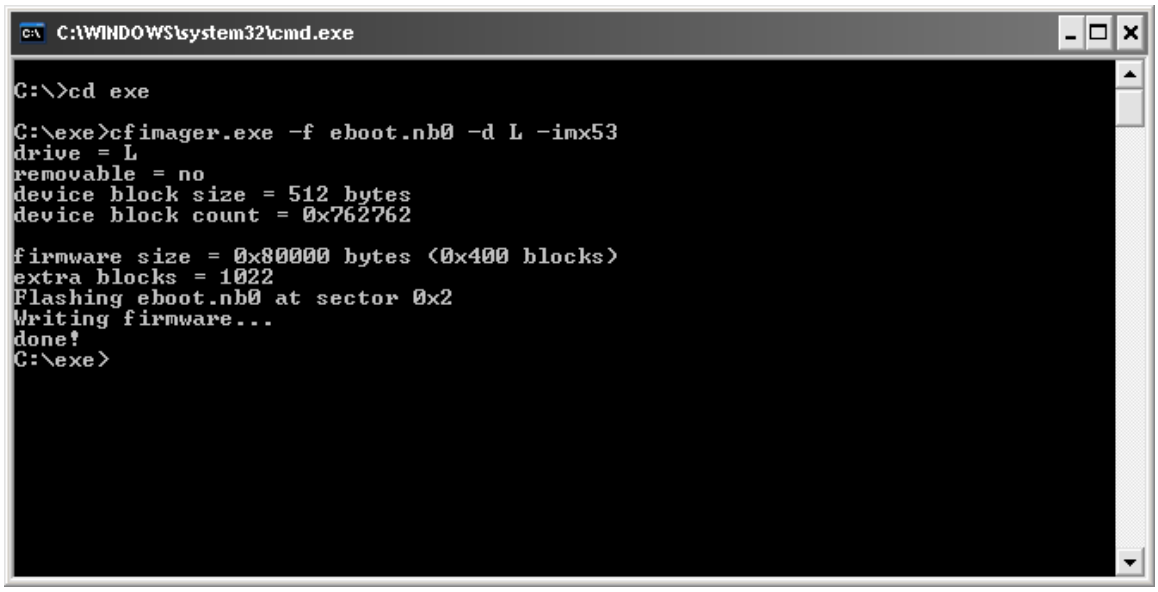

Figure 77: Cfimager for flashing eboot.nb0 (contd)

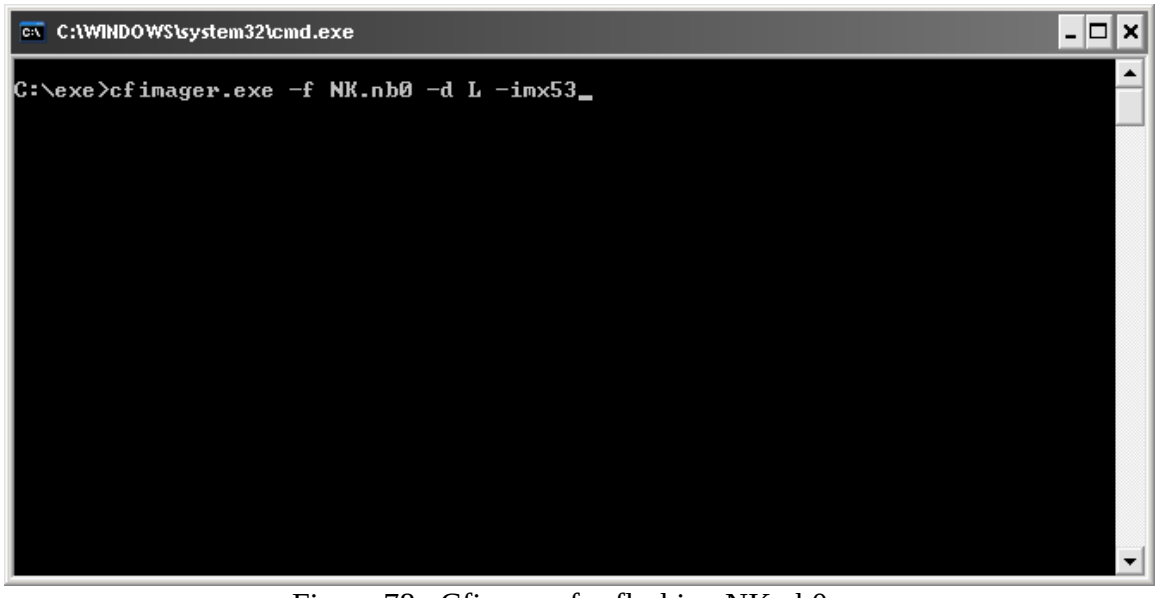

Figure 78: Cfimager for flashing NK.nb0

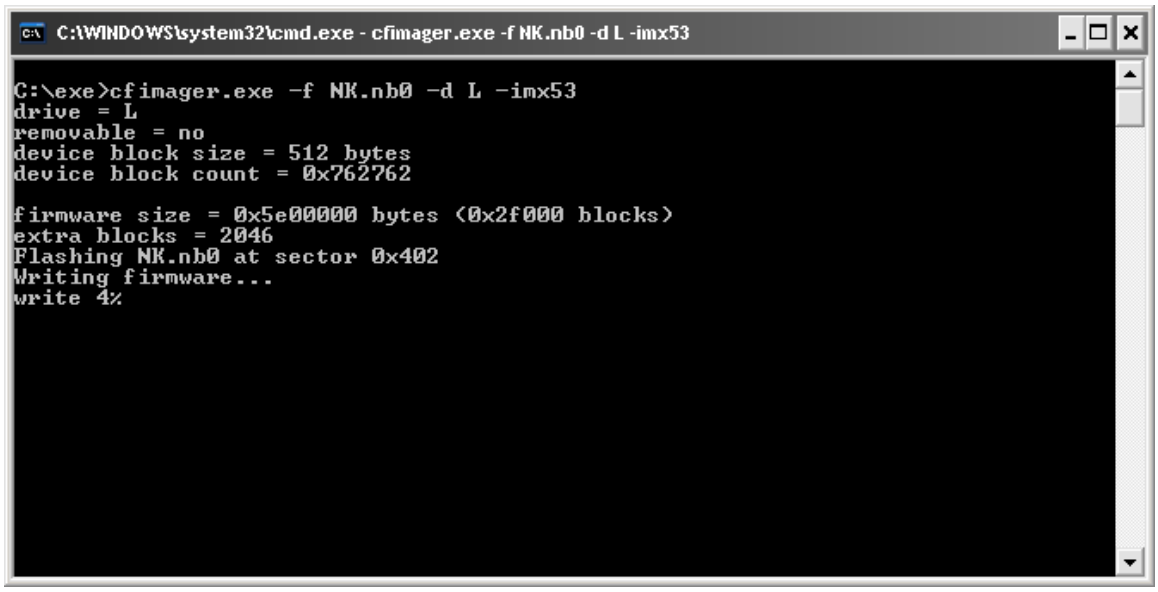
C:\WINDOWS\system32\cmd.exe - cfimager.exe -f NK.nb0 -d L -imx53
C:\exe>cfimager.exe -f NK.nb0 -d L -imx53
drive = L
removable = no
device block size = 512 bytes
device block count = 0x762762
firmware size = 0x5e00000 bytes (0x2f000 blocks)
extra blocks = 2046
Flashing NK.nb0 at sector 0x402
Writing firmware...
write 4%

Figure 79: Cfimager for flashing NK.nb0 (contd)

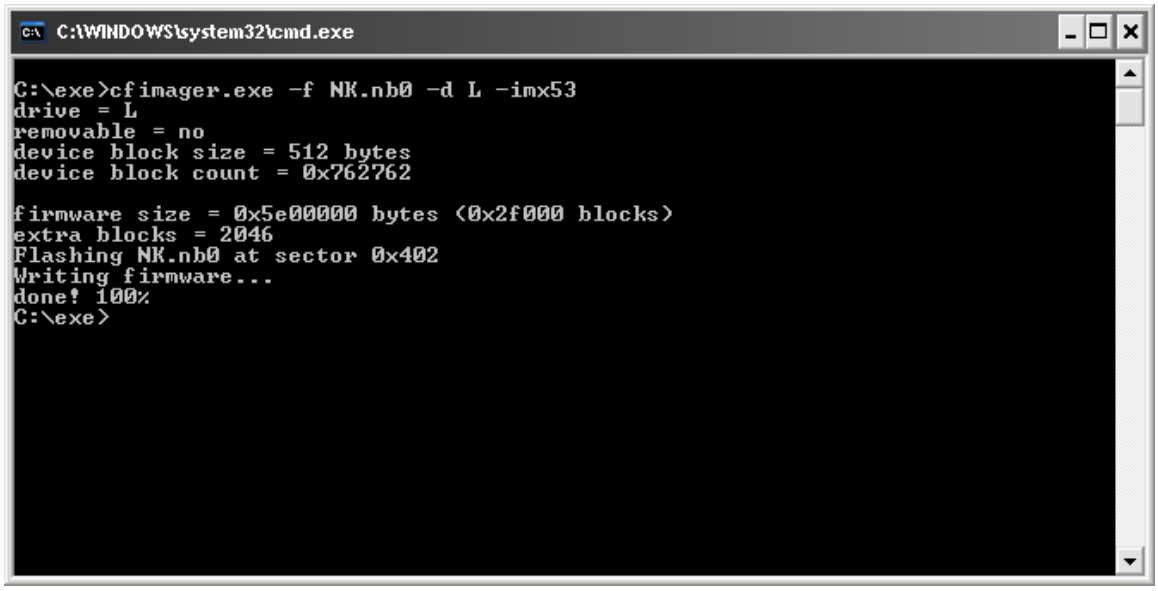

Figure 80: Cfimager for flashing NK.nb0 completed

5.4.2. Downloading NK.bin through Ethernet

1) Before downloading the wince image through Ethernet refer the section “5.5 Booting WinCE image” to make the boot loader setting. Do the settings till subsection 5.5.6.

2) Once the build is completed, in platform builder go to Target->Connectivity options as following snap shot.

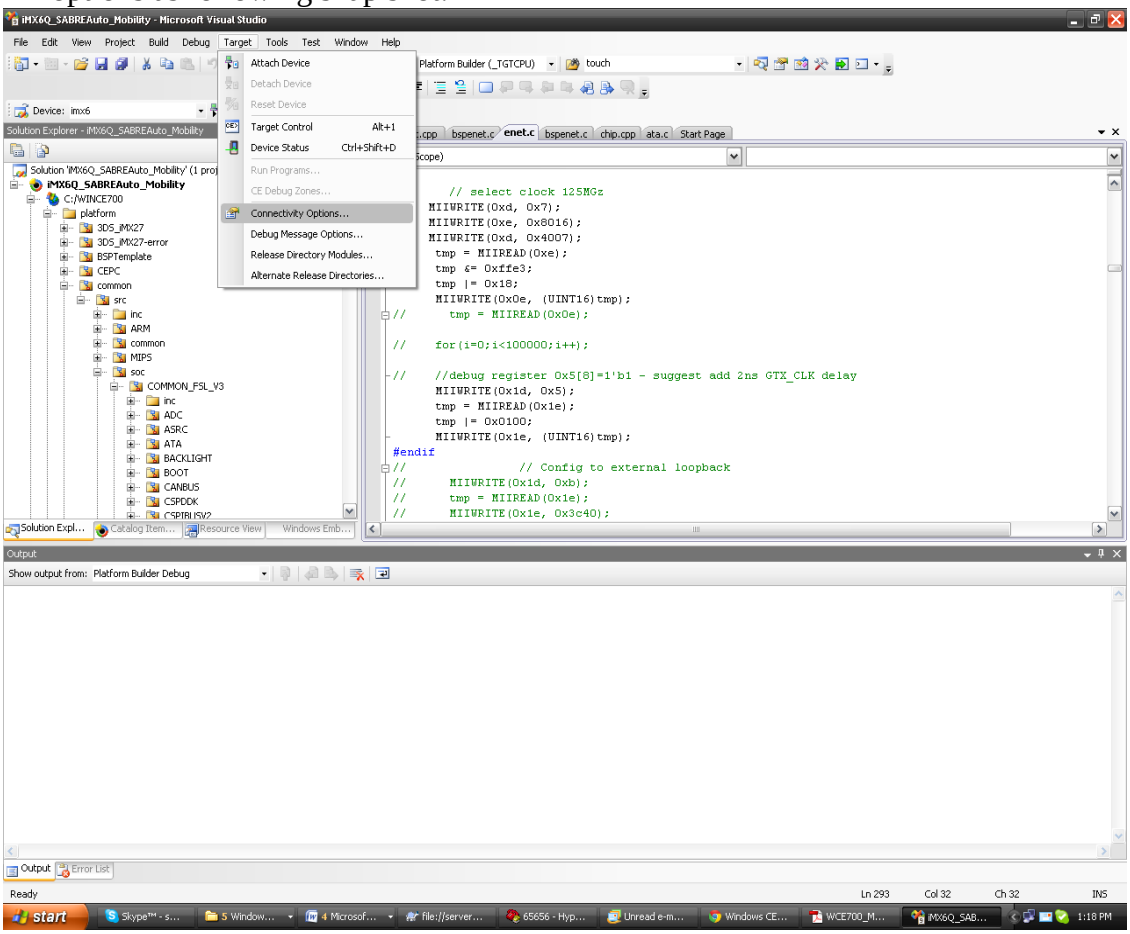

Figure 81: Connectivity options

3) Following screen would appear. In Target Device Connectivity options make sure that kernel download and Kernel Transport are selected as Ethernet. Select kernel debugger as Kdstub. Click Apply and then click OK.

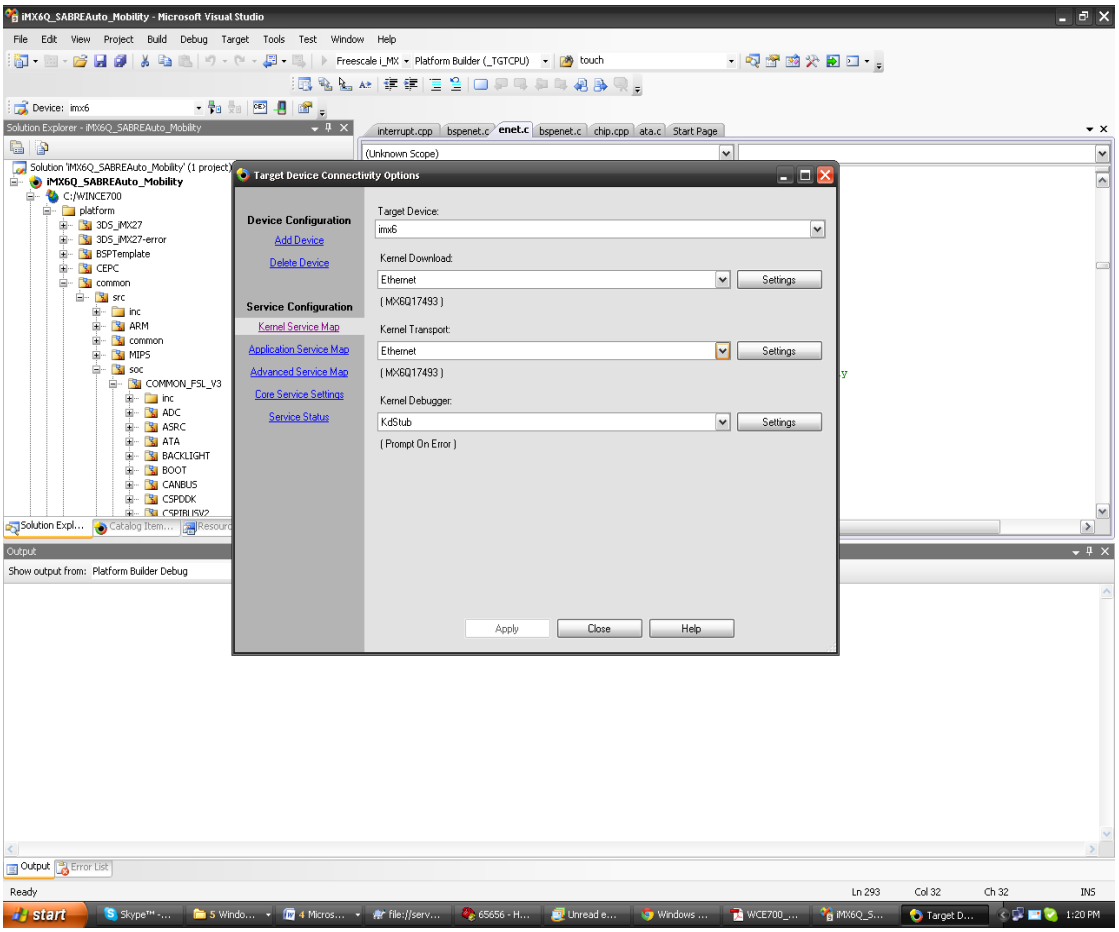

Figure 82: Connectivity options (contd)

4) In boot loader main menu, select the option “D”, following screen would appear.

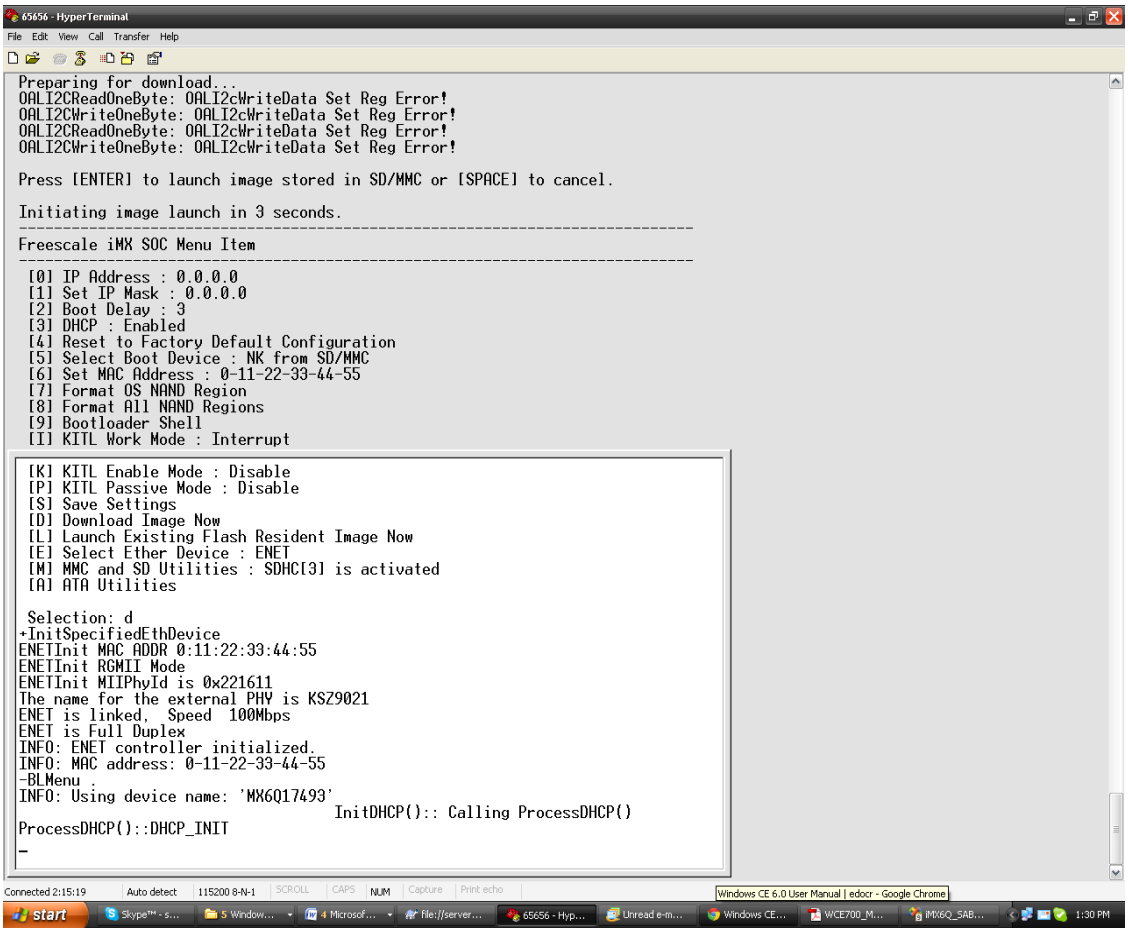
65656 - HyperTerminal
File Edit View Call Transfer Help
Preparing for download...
OALI2CReadOneByte: OALI2cWriteData Set Reg Error!
OALI2CWriteOneByte: OALI2cWriteData Set Reg Error!
OALI2CReadOneByte: OALI2cWriteData Set Reg Error!
OALI2CWriteOneByte: OALI2cWriteData Set Reg Error!
Press [ENTER] to launch image stored in SD/MMC or [SPACE] to cancel.
Initiating image launch in 3 seconds.
Freescale iMX SOC Menu Item
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : 0-11-22-33-44-55
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Disable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : ENET
[M] MMC and SD Utilities : SDHC[3] is activated
[A] ATA Utilities
Selection: d
+InitSpecifiedEthDevice
ENETInit MAC ADDR 0:11:22:33:44:55
ENETInit RGMII Mode
ENETInit MIIPhyId is 0x221611
The name for the external PHY is KSZ9021
ENET is linked, Speed 100Mbps
ENET is Full Duplex
INFO: ENET controller initialized.
INFO: MAC address: 0-11-22-33-44-55
-BLMenu .
INFO: Using device name: 'MX6Q17493'
InitDHCP():: Calling ProcessDHCP()
ProcessDHCP()::DHCP_INIT
Connected 2:15:19
Auto detect
115200 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo
Windows CE 6.0 User Manual | edocr - Google Chrome
start
1:30 PM

Figure 83: Terminal window during downloading

5) The next snap shot shows that it has got the IP from the DHCP server.

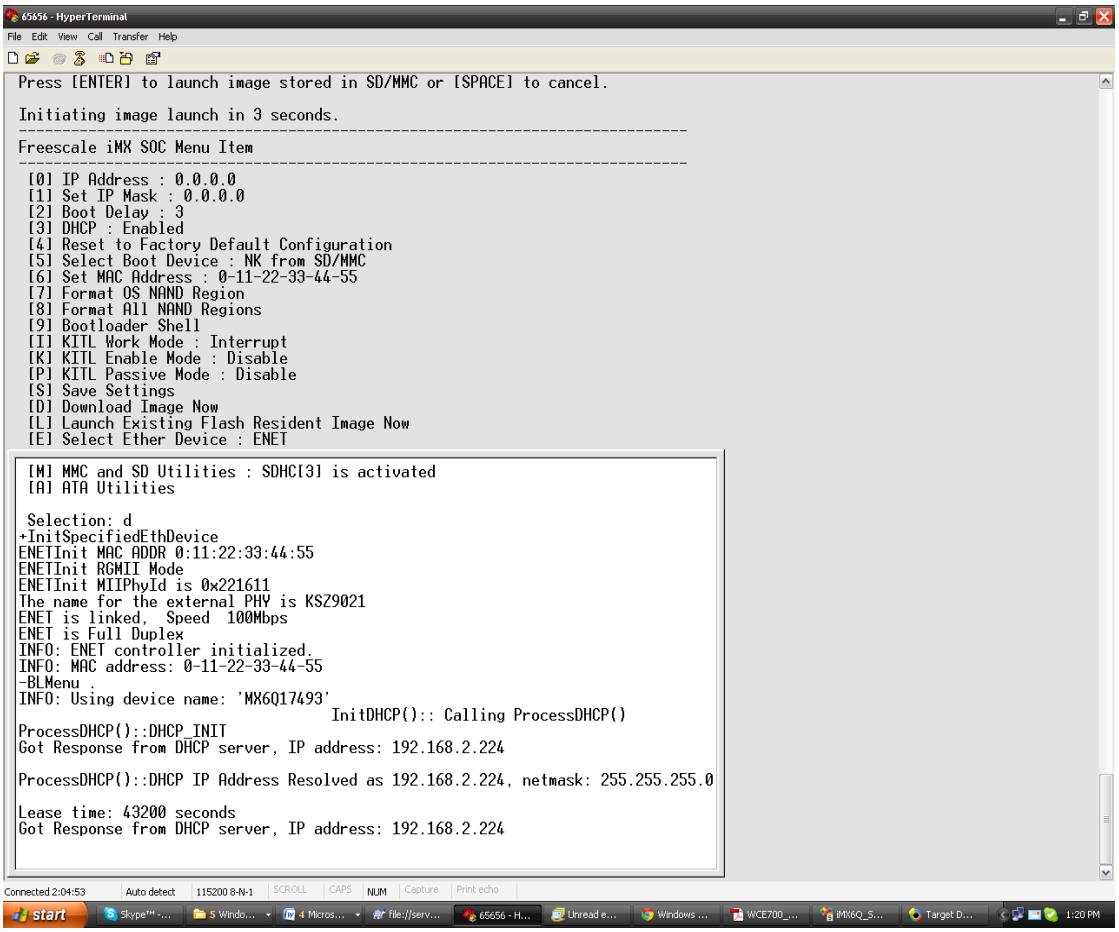
65656 - HyperTerminal
File Edit View Call Transfer Help
Press [ENTER] to launch image stored in SD/MMC or [SPACE] to cancel.
Initiating image launch in 3 seconds.
Freescale iMX SOC Menu Item
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : 0-11-22-33-44-55
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Disable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : ENET
[M] MMC and SD Utilities : SDHC[3] is activated
[A] ATA Utilities
Selection: d
+InitSpecifiedEthDevice
ENETInit MAC ADDR 0:11:22:33:44:55
ENETInit RGMII Mode
ENETInit MIIPhyId is 0x221611
The name for the external PHY is KSZ9021
ENET is linked, Speed 100Mbps
ENET is Full Duplex
INFO: ENET controller initialized.
INFO: MAC address: 0-11-22-33-44-55
-BLMenu .
INFO: Using device name: 'MX6Q17493'
InitDHCP():: Calling ProcessDHCP()
ProcessDHCP()::DHCP_INIT
Got Response from DHCP server, IP address: 192.168.2.224
ProcessDHCP()::DHCP IP Address Resolved as 192.168.2.224, netmask: 255.255.255.0
Lease time: 43200 seconds
Got Response from DHCP server, IP address: 192.168.2.224
Connected 2:04:53
Auto detect
115200 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo
start
1:20 PM

Figure 84: Terminal window during downloading got the IP

6) Next it will send BOOTME message to platform builder as following screen shot.

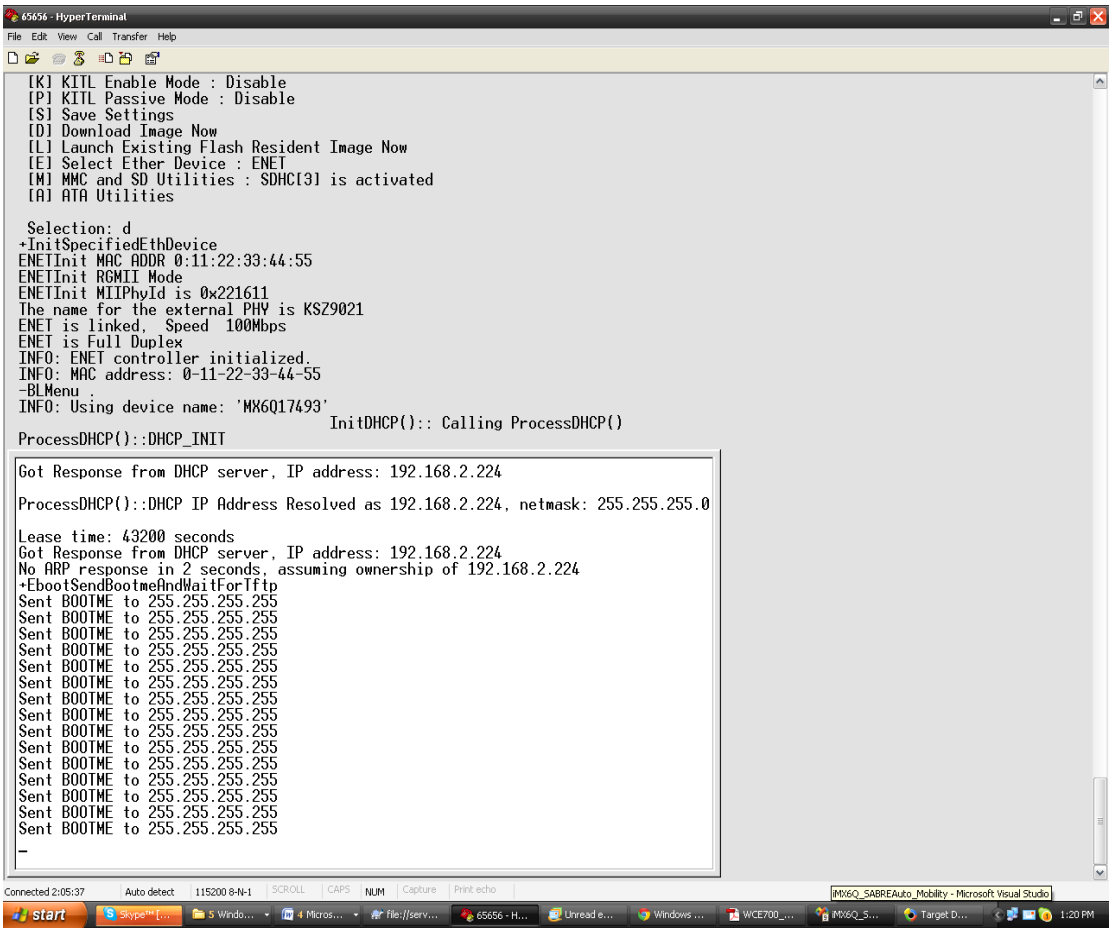
65656 - HyperTerminal
File Edit View Call Transfer Help
[K] KITL Enable Mode : Disable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : ENET
[M] MMC and SD Utilities : SDHC[3] is activated
[A] ATA Utilities
Selection: d
+InitSpecifiedEthDevice
ENETInit MAC ADDR 0:11:22:33:44:55
ENETInit RGMII Mode
ENETInit MIIPhyId is 0x221611
The name for the external PHY is KSZ9021
ENET is linked, Speed 100Mbps
ENET is Full Duplex
INFO: ENET controller initialized.
INFO: MAC address: 0-11-22-33-44-55
-BLMenu .
INFO: Using device name: 'MX6Q17493'
InitDHCP():: Calling ProcessDHCP()
ProcessDHCP():DHCP_INIT
Got Response from DHCP server, IP address: 192.168.2.224
ProcessDHCP():DHCP IP Address Resolved as 192.168.2.224, netmask: 255.255.255.0
Lease time: 43200 seconds
Got Response from DHCP server, IP address: 192.168.2.224
No ARP response in 2 seconds, assuming ownership of 192.168.2.224
+EbootSendBootmeAndWaitForTftp
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Connected 2:05:37
Auto detect
115200 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo
iMX6Q_SABREAuto_Mobility - Microsoft Visual Studio
start
1:20 PM

Figure 85: Terminal window sending BOOTME message

7) Now in platform builder go to Target->Attach Device option as following screen shot.

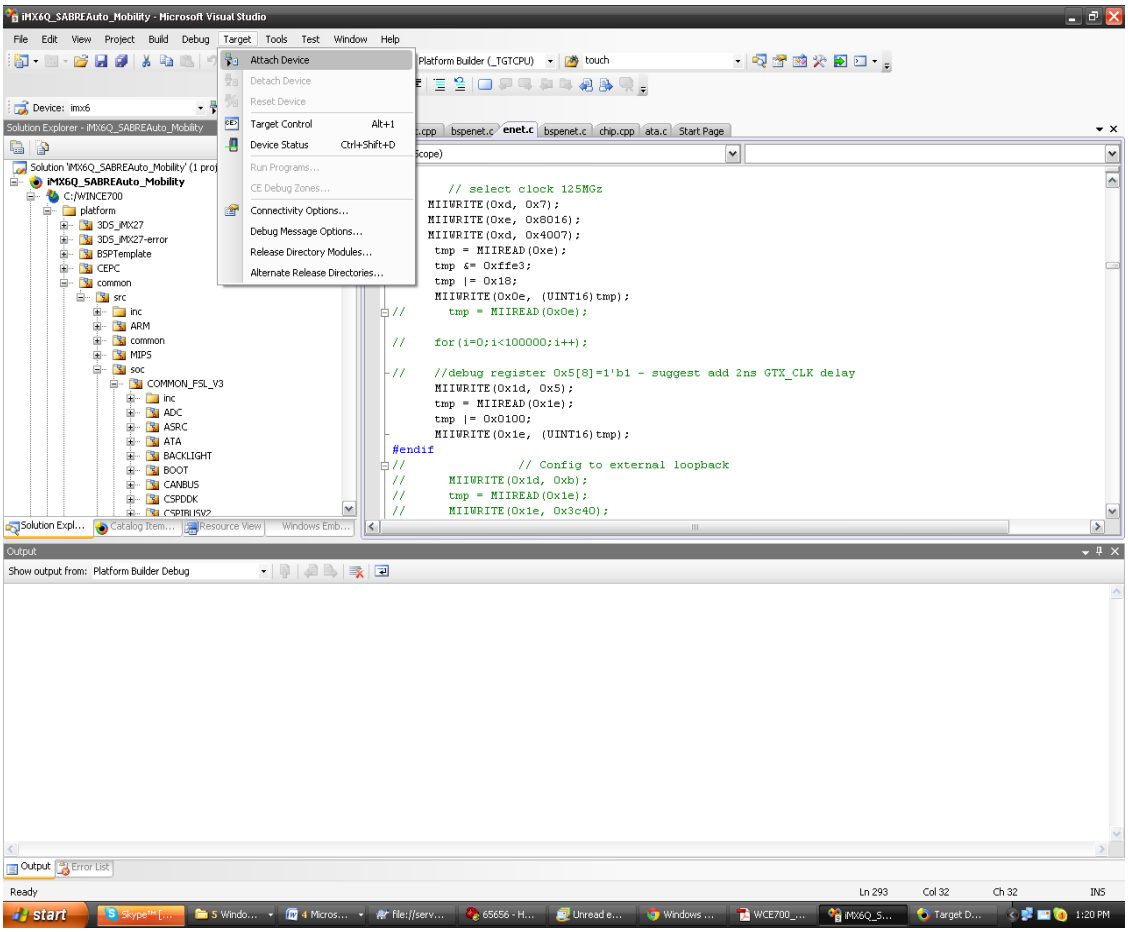

Figure 86: Platform builder while attaching the device

8) Following screen would appear once the Platform builder detects the target device. Click apply.

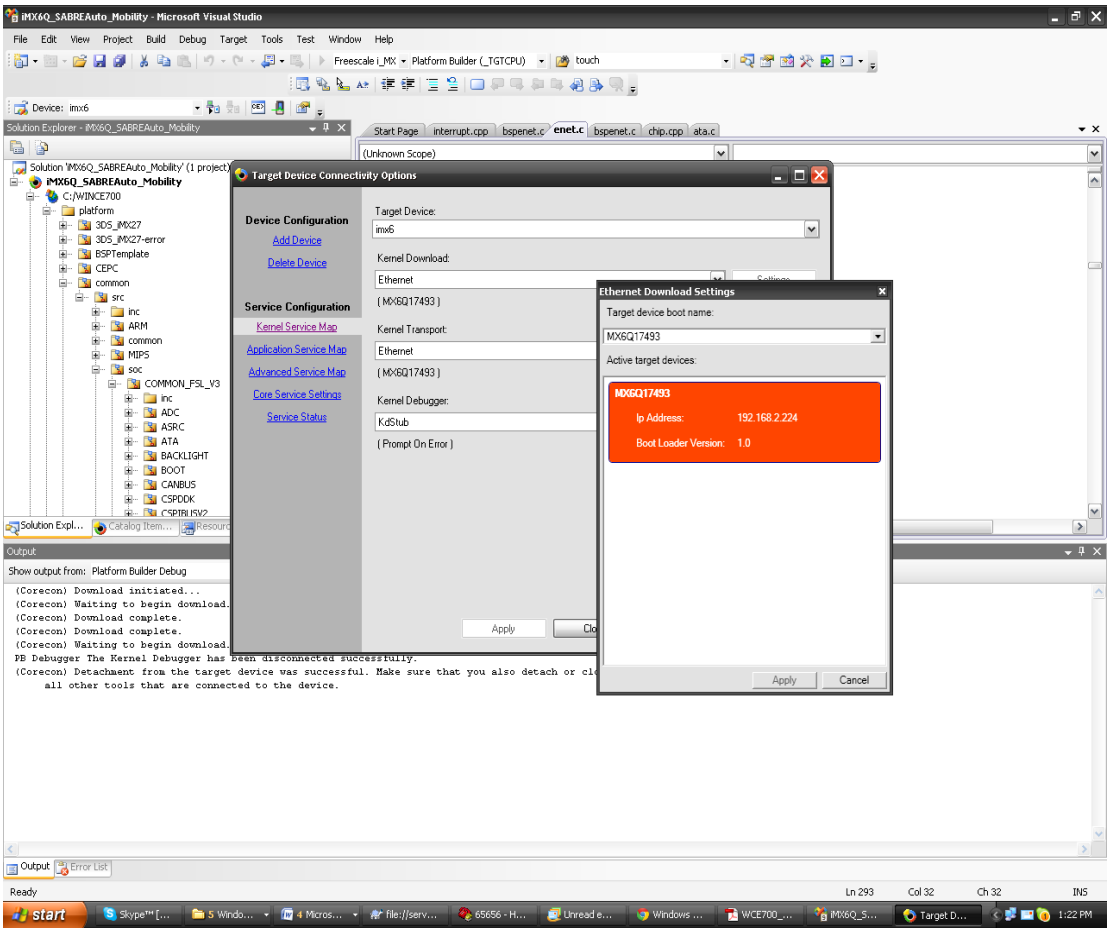

Figure 87: Platform builder device detection

9) Following snap shot shows the downloading progress once the previous step is executed.

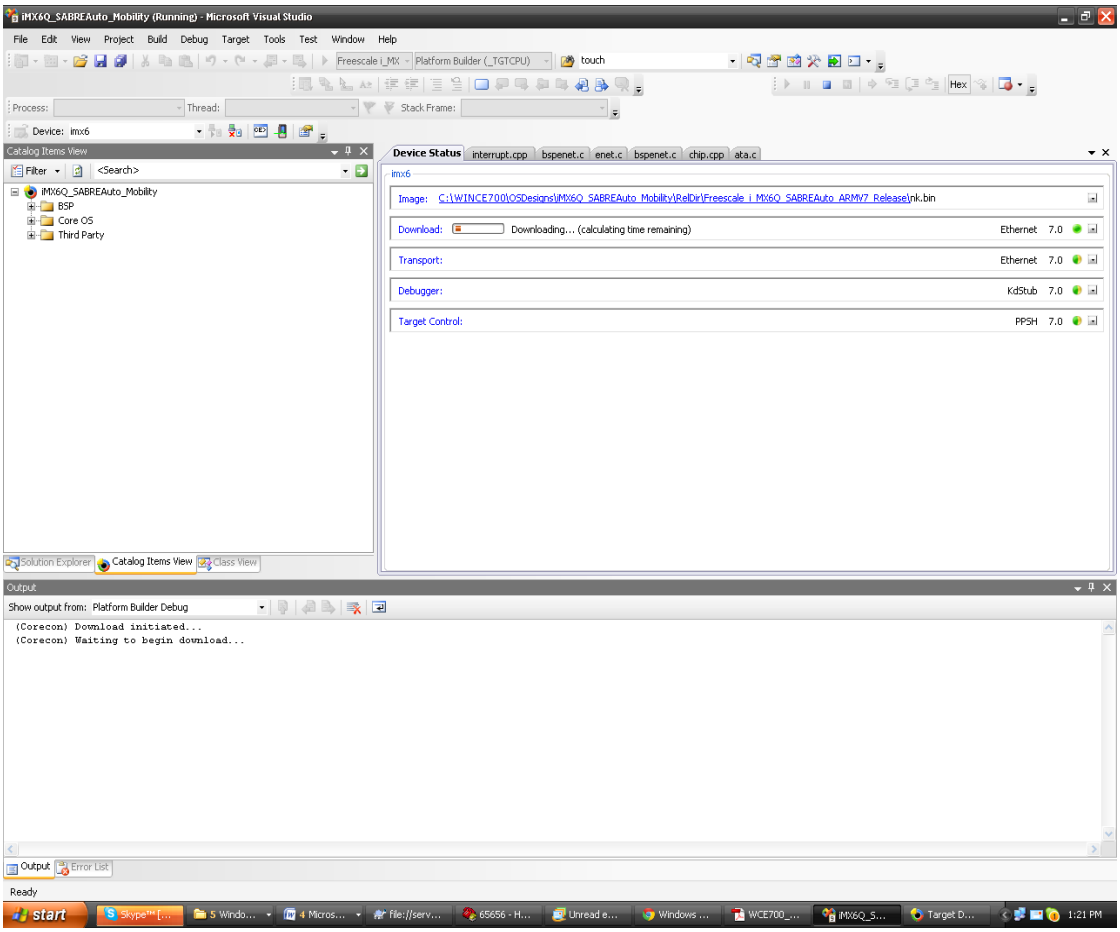

Figure 88: Platform builder window downloading NK.bin

10) Once the download is finished, the terminal screen would look like the following snap shot. It would ask to update the flash. Press ‘y/Y’ to proceed.

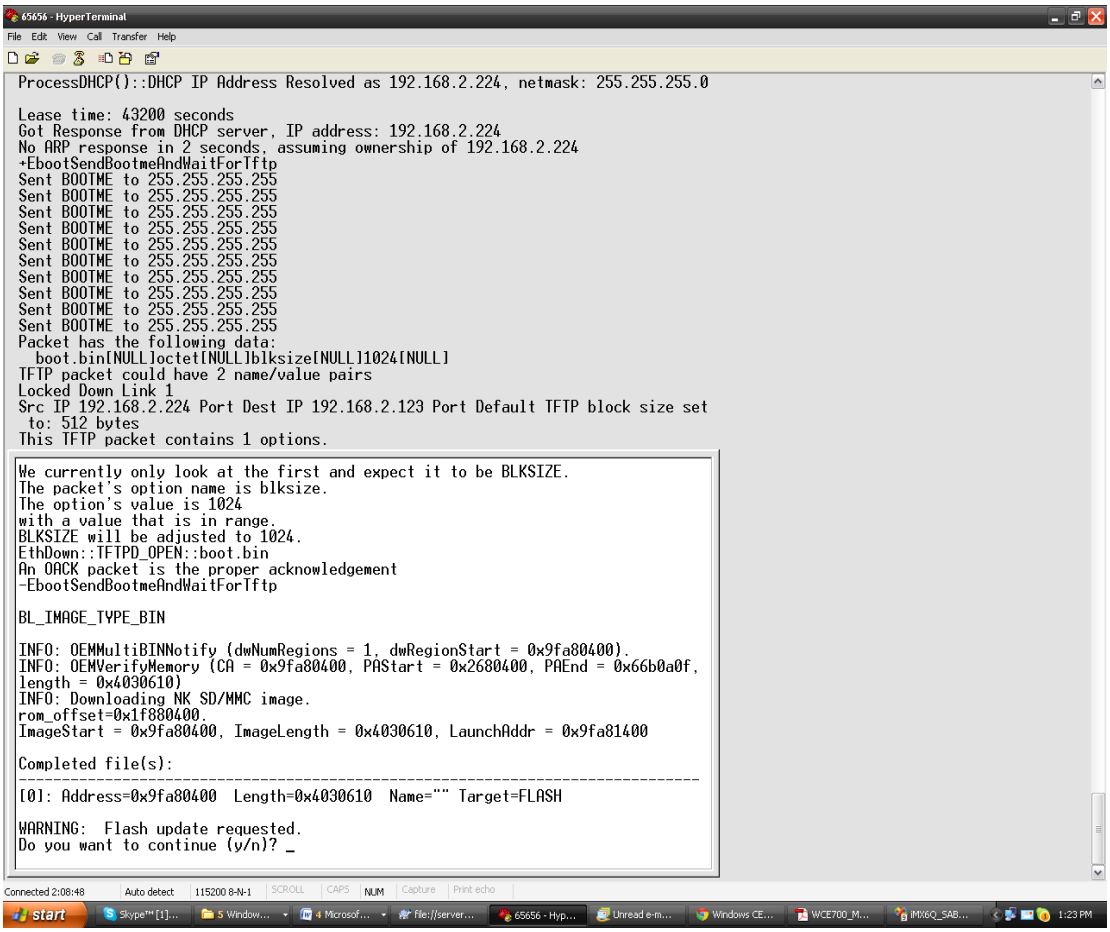
65656 - HyperTerminal
File Edit View Call Transfer Help
ProcessDHCP():DHCP IP Address Resolved as 192.168.2.224, netmask: 255.255.255.0
Lease time: 43200 seconds
Got Response from DHCP server, IP address: 192.168.2.224
No ARP response in 2 seconds, assuming ownership of 192.168.2.224
+EbootSendBootmeAndWaitForTftp
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Packet has the following data:
boot.bin[NULL]octet[NULL]blksize[NULL]1024[NULL]
TFTP packet could have 2 name/value pairs
Locked Down Link 1
Src IP 192.168.2.224 Port Dest IP 192.168.2.123 Port Default TFTP block size set to: 512 bytes
This TFTP packet contains 1 options.
We currently only look at the first and expect it to be BLKSIZE.
The packet's option name is blksize.
The option's value is 1024
with a value that is in range.
BLKSIZE will be adjusted to 1024.
EthDown::TFTPD_OPEN::boot.bin
An OACK packet is the proper acknowledgement
-EbootSendBootmeAndWaitForTftp
BL_IMAGE_TYPE_BIN
INFO: OEMMultiBINNotify (dwNumRegions = 1, dwRegionStart = 0x9fa80400).
INFO: OEMVerifyMemory (CA = 0x9fa80400, PAStart = 0x2680400, PAEnd = 0x66b0a0f, length = 0x4030610)
INFO: Downloading NK SD/MMC image.
rom_offset=0x1f880400.
ImageStart = 0x9fa80400, ImageLength = 0x4030610, LaunchAddr = 0x9fa81400
Completed file(s):
[0]: Address=0x9fa80400 Length=0x4030610 Name="" Target=FLASH
WARNING: Flash update requested.
Do you want to continue (y/n)? _
Connected 2:08:48
Auto detect
115200 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo
start
1:23 PM

Figure 89: Terminal window after downloading

11) Now it is copying the NK.bin to SD/MMC card.

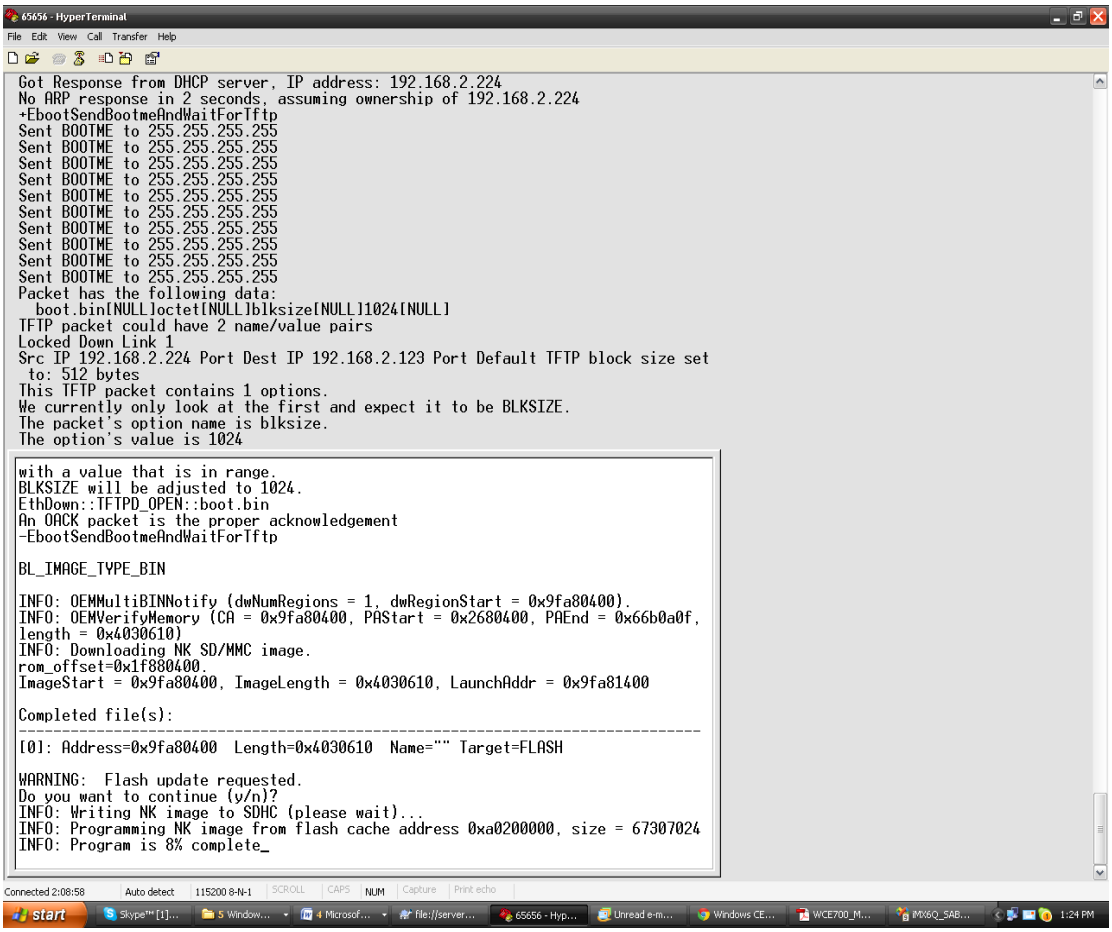
65656 - HyperTerminal
File Edit View Call Transfer Help
Got Response from DHCP server, IP address: 192.168.2.224
No ARP response in 2 seconds, assuming ownership of 192.168.2.224
+EbootSendBootmeAndWaitForTftp
Sent BOOTME to 255.255.255.255
Packet has the following data:
boot.bin[NULL]octet[NULL]blksize[NULL]1024[NULL]
TFTP packet could have 2 name/value pairs
Locked Down Link 1
Src IP 192.168.2.224 Port Dest IP 192.168.2.123 Port Default TFTP block size set to: 512 bytes
This TFTP packet contains 1 options.
We currently only look at the first and expect it to be BLKSIZE.
The packet's option name is blksize.
The option's value is 1024
with a value that is in range.
BLKSIZE will be adjusted to 1024.
EthDown::TFTPD_OPEN::boot.bin
An OACK packet is the proper acknowledgement
-EbootSendBootmeAndWaitForTftp
BL_IMAGE_TYPE_BIN
INFO: OEMMultiBINNotify (dwNumRegions = 1, dwRegionStart = 0x9fa80400).
INFO: OEMVerifyMemory (CA = 0x9fa80400, PAStart = 0x2680400, PAEnd = 0x66b0a0f, length = 0x4030610)
INFO: Downloading NK SD/MMC image.
rom_offset=0x1f880400.
ImageStart = 0x9fa80400, ImageLength = 0x4030610, LaunchAddr = 0x9fa81400
Completed file(s):
[0]: Address=0x9fa80400 Length=0x4030610 Name="" Target=FLASH
WARNING: Flash update requested.
Do you want to continue (y/n)?
INFO: Writing NK image to SDHC (please wait)...
INFO: Programming NK image from flash cache address 0xa0200000, size = 67307024
INFO: Program is 8% complete_
Connected 2:08:58
Auto detect
115200 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo
start
1:24 PM

Figure 90: Copying NK.bin to SD/MMC

12) Once the image has been copied to SD/MMC card, it will ask for the reboot as the following snap shot. Just press ‘y/Y’ to continue.

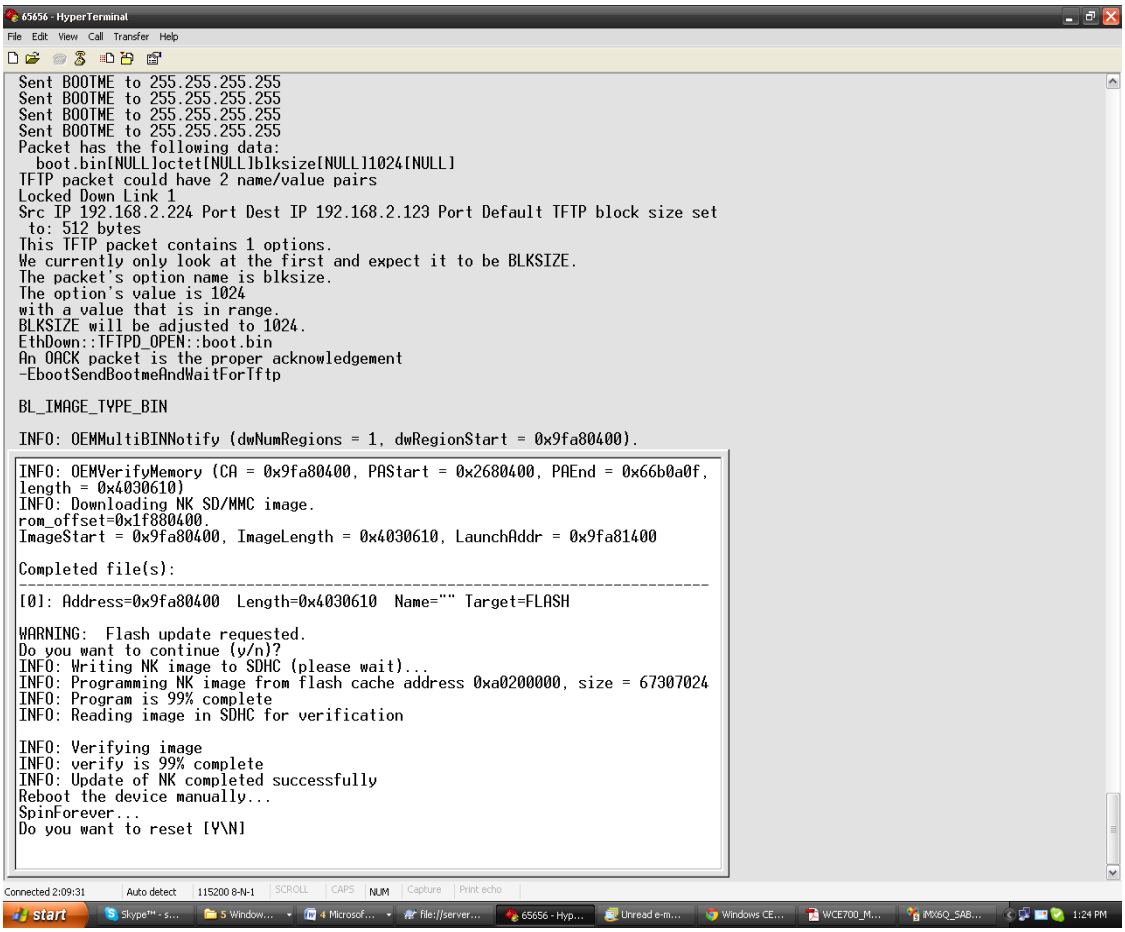
65656 - HyperTerminal
File Edit View Call Transfer Help
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Sent BOOTME to 255.255.255.255
Packet has the following data:
boot.bin[NULL]octet[NULL]blksize[NULL]1024[NULL]
TFTP packet could have 2 name/value pairs
Locked Down Link 1
Src IP 192.168.2.224 Port Dest IP 192.168.2.123 Port Default TFTP block size set to: 512 bytes
This TFTP packet contains 1 options.
We currently only look at the first and expect it to be BLKSIZE.
The packet's option name is blksize.
The option's value is 1024
with a value that is in range.
BLKSIZE will be adjusted to 1024.
EthDown::TFTPD_OPEN::boot.bin
An OACK packet is the proper acknowledgement
-EbootSendBootmeAndWaitForTftp
BL_IMAGE_TYPE_BIN
INFO: OEMMultiBINNotify (dwNumRegions = 1, dwRegionStart = 0x9fa80400).
INFO: OEMVerifyMemory (CA = 0x9fa80400, PAStart = 0x2680400, PAEnd = 0x66b0a0f, length = 0x4030610)
INFO: Downloading NK SD/MMC image.
rom_offset=0x1f880400.
ImageStart = 0x9fa80400, ImageLength = 0x4030610, LaunchAddr = 0x9fa81400
Completed file(s):
[0]: Address=0x9fa80400 Length=0x4030610 Name="" Target=FLASH
WARNING: Flash update requested.
Do you want to continue (y/n)?
INFO: Writing NK image to SDHC (please wait)...
INFO: Programming NK image from flash cache address 0xa0200000, size = 67307024
INFO: Program is 99% complete
INFO: Reading image in SDHC for verification
INFO: Verifying image
INFO: verify is 99% complete
INFO: Update of NK completed successfully
Reboot the device manually...
SpinForever...
Do you want to reset [Y\N]
Connected 2:09:31 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
start
1:24 PM

Figure 91: Reset option after NK is copied to SD/MMC.

13) Once the key ‘y/Y’ is pressed the terminal would look like the following screen shot.

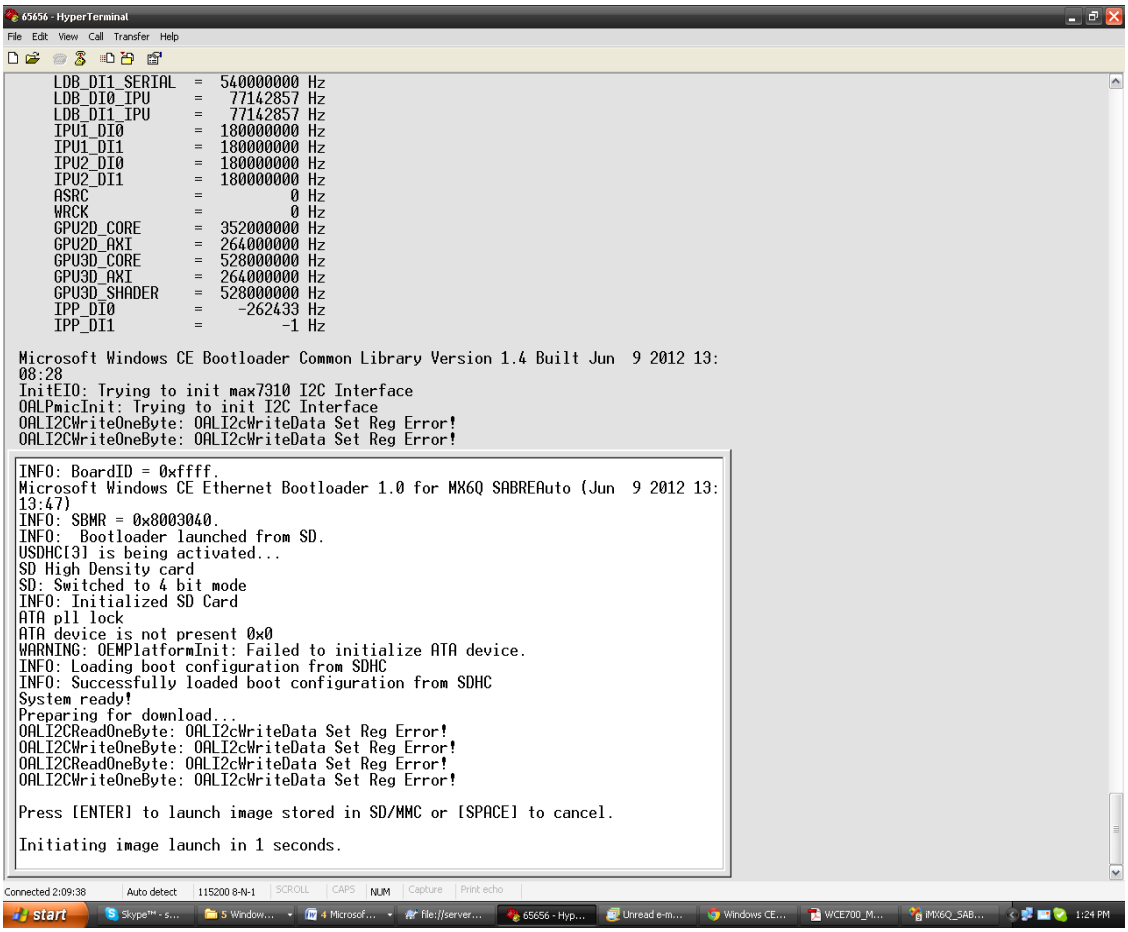
65656 - HyperTerminal
File Edit View Call Transfer Help
LDB_DI1_SERIAL = 540000000 Hz
LDB_DI0_IPU = 77142857 Hz
LDB_DI1_IPU = 77142857 Hz
IPU1_DI0 = 180000000 Hz
IPU1_DI1 = 180000000 Hz
IPU2_DI0 = 180000000 Hz
IPU2_DI1 = 180000000 Hz
ASRC = 0 Hz
WRCK = 0 Hz
GPU2D_CORE = 352000000 Hz
GPU2D_AXI = 264000000 Hz
GPU3D_CORE = 528000000 Hz
GPU3D_AXI = 264000000 Hz
GPU3D_SHADER = 528000000 Hz
IPP_DI0 = -262433 Hz
IPP_DI1 = -1 Hz
Microsoft Windows CE Bootloader Common Library Version 1.4 Built Jun 9 2012 13:08:28
InitEIO: Trying to init max7310 I2C Interface
OALPmicInit: Trying to init I2C Interface
OALI2CWriteOneByte: OALI2cWriteData Set Reg Error!
OALI2CWriteOneByte: OALI2cWriteData Set Reg Error!
INFO: BoardID = 0xffff.
Microsoft Windows CE Ethernet Bootloader 1.0 for MX6Q SABREAuto (Jun 9 2012 13:13:47)
INFO: SBMR = 0x8003040.
INFO: Bootloader launched from SD.
USDHC[3] is being activated...
SD High Density card
SD: Switched to 4 bit mode
INFO: Initialized SD Card
ATA pll lock
ATA device is not present 0x0
WARNING: OEMPlatformInit: Failed to initialize ATA device.
INFO: Loading boot configuration from SDHC
INFO: Successfully loaded boot configuration from SDHC
System ready!
Preparing for download...
OALI2CReadOneByte: OALI2cWriteData Set Reg Error!
OALI2CWriteOneByte: OALI2cWriteData Set Reg Error!
OALI2CReadOneByte: OALI2cWriteData Set Reg Error!
OALI2CWriteOneByte: OALI2cWriteData Set Reg Error!
Press [ENTER] to launch image stored in SD/MMC or [SPACE] to cancel.
Initiating image launch in 1 seconds.
Connected 2:09:38 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
start
1:24 PM

Figure 92: Rebooting the board after downloading the image

14) After some 24 seconds, LCD on iW-G15 module would look like the following snap shot.

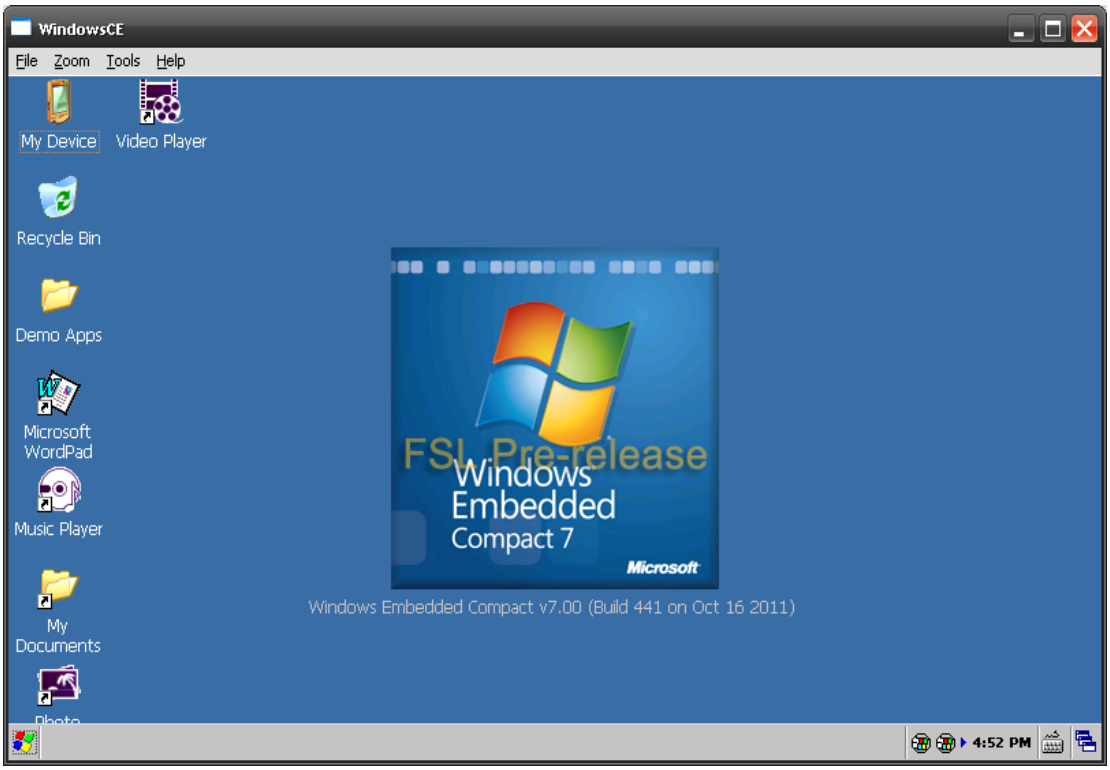

Figure 93: WinCE desktop

5.5. Booting WinCE image

5.5.1. Boot loader Main Menu

1) After powering on the board, HyperTerminal displays as shown below.

```
INFO:  Bootloader launched from SD.
ESDHC[3] is being activated...
SD High Density card
SD: Switched to 4 bit mode
INFO: Initialized SD Card
INFO: Loading boot configuration from SDHC
INFO: Successfully loaded boot configuration from SDHC
System ready!
Preparing for download...

Press [ENTER] to download now or [SPACE] to cancel.

Initiating image download in 1 seconds.
```

```
------------------------------------------------------------------
Freescale iMX SOC Menu Item
------------------------------------------------------------------
 [0] IP Address : 0.0.0.0
 [1] Set IP Mask : 0.0.0.0
 [2] Boot Delay : 3
 [3] DHCP : Enabled
 [4] Reset to Factory Default Configuration
 [5] Select Boot Device : Disabled
 [6] Set MAC Address : ff-ff-ff-ff-ff-ff
 [7] Format OS NAND Region
 [8] Format All NAND Regions
 [9] Bootloader Shell
 [I] KITL Work Mode : Interrupt
 [K] KITL Enable Mode : Enable
 [P] KITL Passive Mode : Disable
 [S] Save Settings
 [D] Download Image Now
 [L] Launch Existing Flash Resident Image Now
 [E] Select Ether Device : FEC
 [M] MMC and SD Utilities : ESDHC[3] is activated
 [A] ATA Utilities

 Selection:
```

Figure 94: Boot loader window

Note: Options mentioned in this boot loader test are case-insensitive.

2) Press [SPACE] key on PC/Laptop within 2 seconds after power up, to launch the boot loader menu in HyperTerminal as shown below. Otherwise system will start loading the image from the SD/MMC card. If image is not present in SD/MMC

then system will hang.

```
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : ENET
[M] MMC and SD Utilities : SDHC[3] is activated
[A] ATA Utilities

Selection: e
```

```
--------------------------------------------------------------------------------
Freescale iMX SOC Menu Item   (UNSAVED CHANGES)
--------------------------------------------------------------------------------
 [0] IP Address : 0.0.0.0
 [1] Set IP Mask : 0.0.0.0
 [2] Boot Delay : 3
 [3] DHCP : Enabled
 [4] Reset to Factory Default Configuration
 [5] Select Boot Device : Disabled
 [6] Set MAC Address : ff-ff-ff-ff-ff-ff
 [7] Format OS NAND Region
 [8] Format All NAND Regions
 [9] Bootloader Shell
 [I] KITL Work Mode : Interrupt
 [K] KITL Enable Mode : Enable
 [P] KITL Passive Mode : Disable
 [S] Save Settings
 [D] Download Image Now
 [L] Launch Existing Flash Resident Image Now
 [E] Select Ether Device : FEC
 [M] MMC and SD Utilities : SDHC[3] is activated
 [A] ATA Utilities

 Selection: _
```

Figure 95: Terminal with boot loader menu during changes

3) The marked options should be changed for our requirement as of now.

5.5.2. Select Boot Device

1) Select option ‘5’ to set the boot device as SD/MMC.

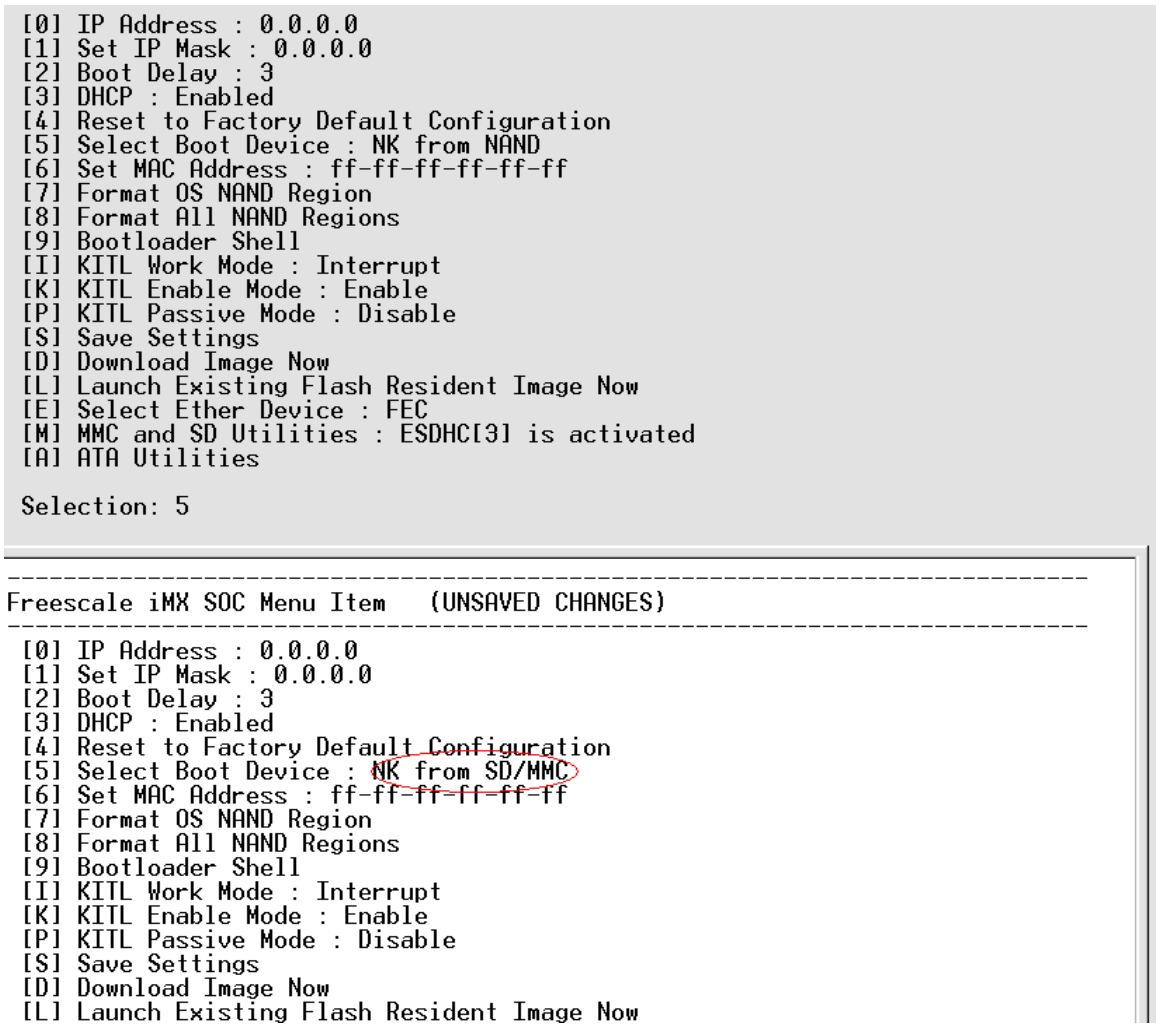
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from NAND
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : FEC
[M] MMC and SD Utilities : ESDHC[3] is activated
[A] ATA Utilities
Selection: 5
Freescale iMX SOC Menu Item (UNSAVED CHANGES)
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now

Figure 96: Terminal changing the boot device

5.5.3. Set MAC address

1) Select option ‘6’ to enter into Short Ram test.
2) Set the MAC address as 00:11:22:33:44:55
3) The MAC address can be different also.

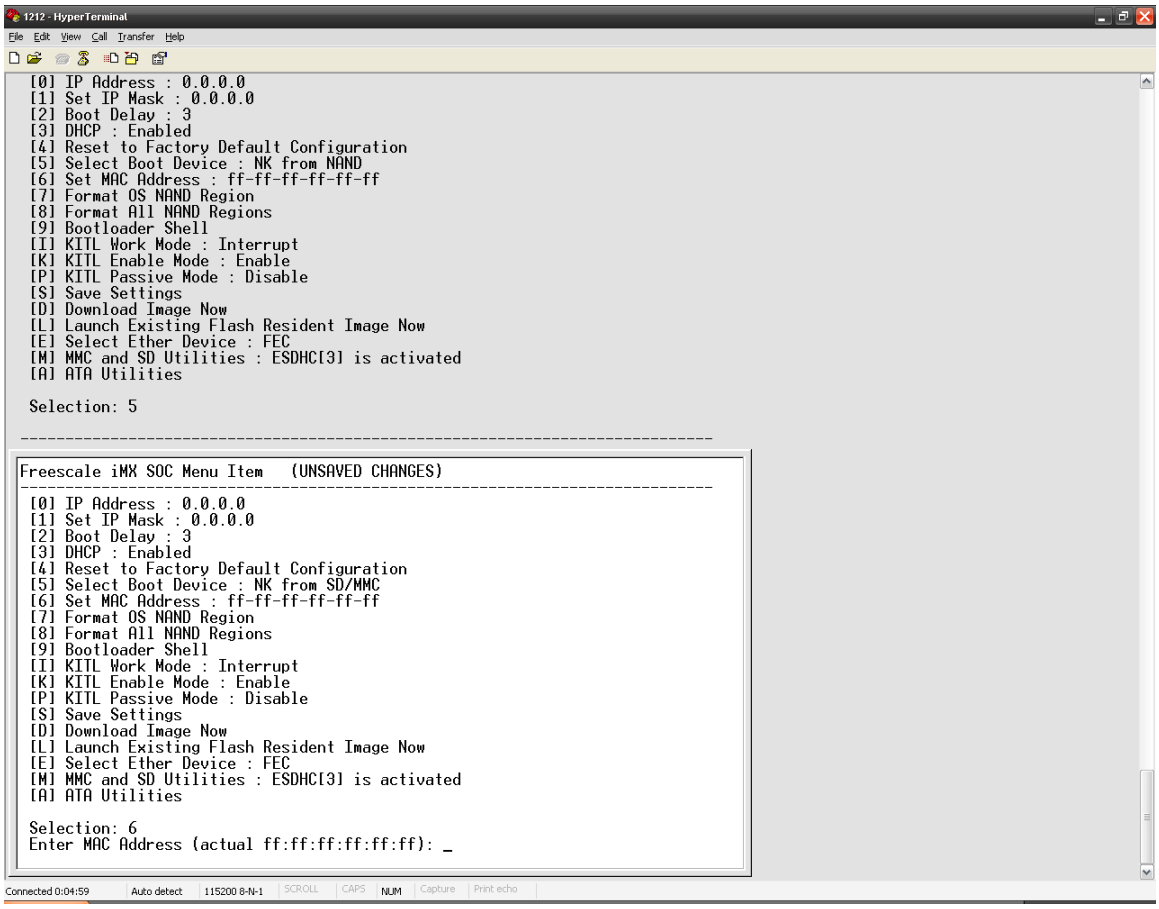
1212 - HyperTerminal
File Edit View Call Transfer Help
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from NAND
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : FEC
[M] MMC and SD Utilities : ESDHC[3] is activated
[A] ATA Utilities
Selection: 5
Freescale iMX SOC Menu Item (UNSAVED CHANGES)
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : FEC
[M] MMC and SD Utilities : ESDHC[3] is activated
[A] ATA Utilities
Selection: 6
Enter MAC Address (actual ff:ff:ff:ff:ff:ff): _
Connected 0:04:59 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo

Figure 97: Setting MAC address

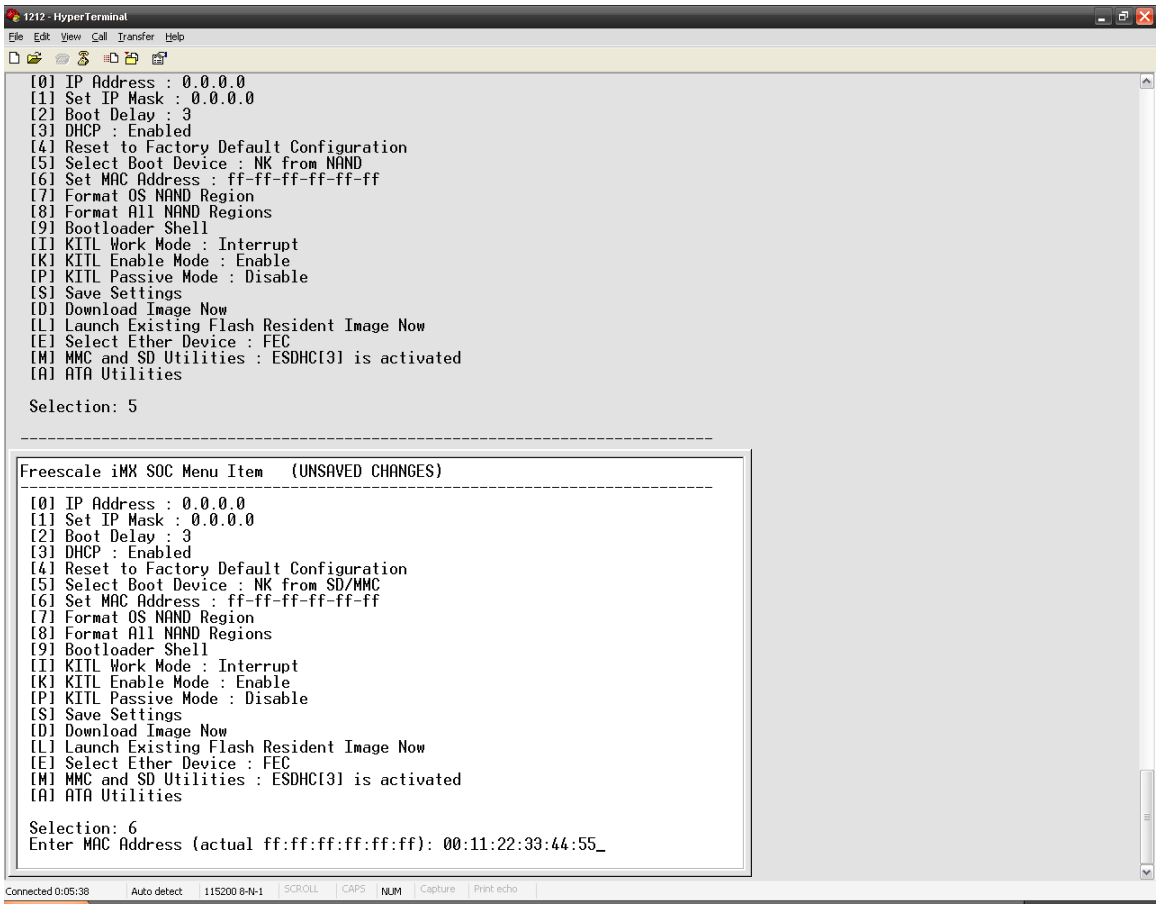
1212 - HyperTerminal
File Edit View Call Transfer Help
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from NAND
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : FEC
[M] MMC and SD Utilities : ESDHC[3] is activated
[A] ATA Utilities
Selection: 5
Freescale iMX SOC Menu Item (UNSAVED CHANGES)
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : FEC
[M] MMC and SD Utilities : ESDHC[3] is activated
[A] ATA Utilities
Selection: 6
Enter MAC Address (actual ff:ff:ff:ff:ff:ff): 00:11:22:33:44:55_
Connected 0:05:38 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo

Figure 98: Setting MAC address (contd)

```
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : FEC
[M] MMC and SD Utilities : ESDHC[3] is activated
[A] ATA Utilities

Selection: 6
Enter MAC Address (actual ff:ff:ff:ff:ff:ff): 00:11:22:33:44:55
MAC Address set to 00:11:22:33:44:55
```

```
--------------------------------------------------------------------------------
reescale iMX SOC Menu Item   (UNSAVED CHANGES)
--------------------------------------------------------------------------------
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : 0-11-22-33-44-55
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
```

Figure 99: MAC address set

5.5.4. KITL Enable mode

1) Press ‘K’ to disable or enable KITL as required.

```
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : 0-11-22-33-44-55
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : FEC
[M] MMC and SD Utilities : ESDHC[3] is activated
[A] ATA Utilities

Selection: k
```

```
------------------------------------------------------------------------
reescale iMX SOC Menu Item   (UNSAVED CHANGES)
------------------------------------------------------------------------
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : NK from SD/MMC
[6] Set MAC Address : 0-11-22-33-44-55
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Disable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
```

Figure 100: Disabling the KITL

5.5.5. Change the ether device

Press ‘E’ until the option ‘**ENET’** appears in main menu.

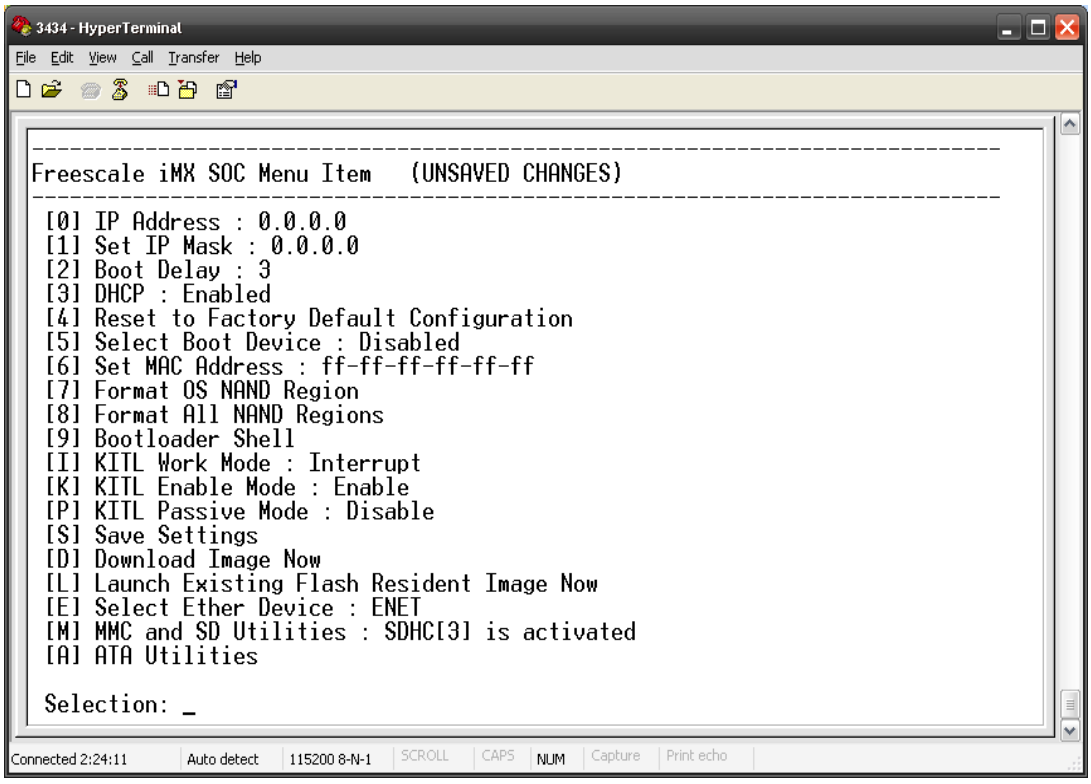
3434 - HyperTerminal
File Edit View Call Transfer Help
Freescale iMX SOC Menu Item (UNSAVED CHANGES)
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : Disabled
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[I] KITL Work Mode : Interrupt
[K] KITL Enable Mode : Enable
[P] KITL Passive Mode : Disable
[S] Save Settings
[D] Download Image Now
[L] Launch Existing Flash Resident Image Now
[E] Select Ether Device : ENET
[M] MMC and SD Utilities : SDHC[3] is activated
[A] ATA Utilities
Selection: _
Connected 2:24:11
Auto detect
115200 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Figure 101: Changing the Ether device

5.5.6. Save settings

1) Select the option ‘S’ in the main menu to save the configurations.
2) This option will save all the changes in the SD/MMC.

5.5.7. Boot WinCE 7.0

1) Press ‘l/L’ to launch the image from the SD/MMC

2) The iW-G15 display looks like the following screen shot.

Figure 102: WinCE Desktop

5.6. CETK Test Setup

Requirements:

1) Windows XP/Vista/7 host PC
2) USB OTG cable
3) Windows Embedded Compact 7

Procedure:

1) Power ON iW-G15 board.

2) Boot WinCE 7.0 from SD/MMC card.

3) First connect the iW-G15 board and the Host PC with the Active sync 4.5 if host PC is Windows XP using USB OTG cable.

4) Open Installed Windows Embedded Compact Test in your PC as shown in the following screen shot.

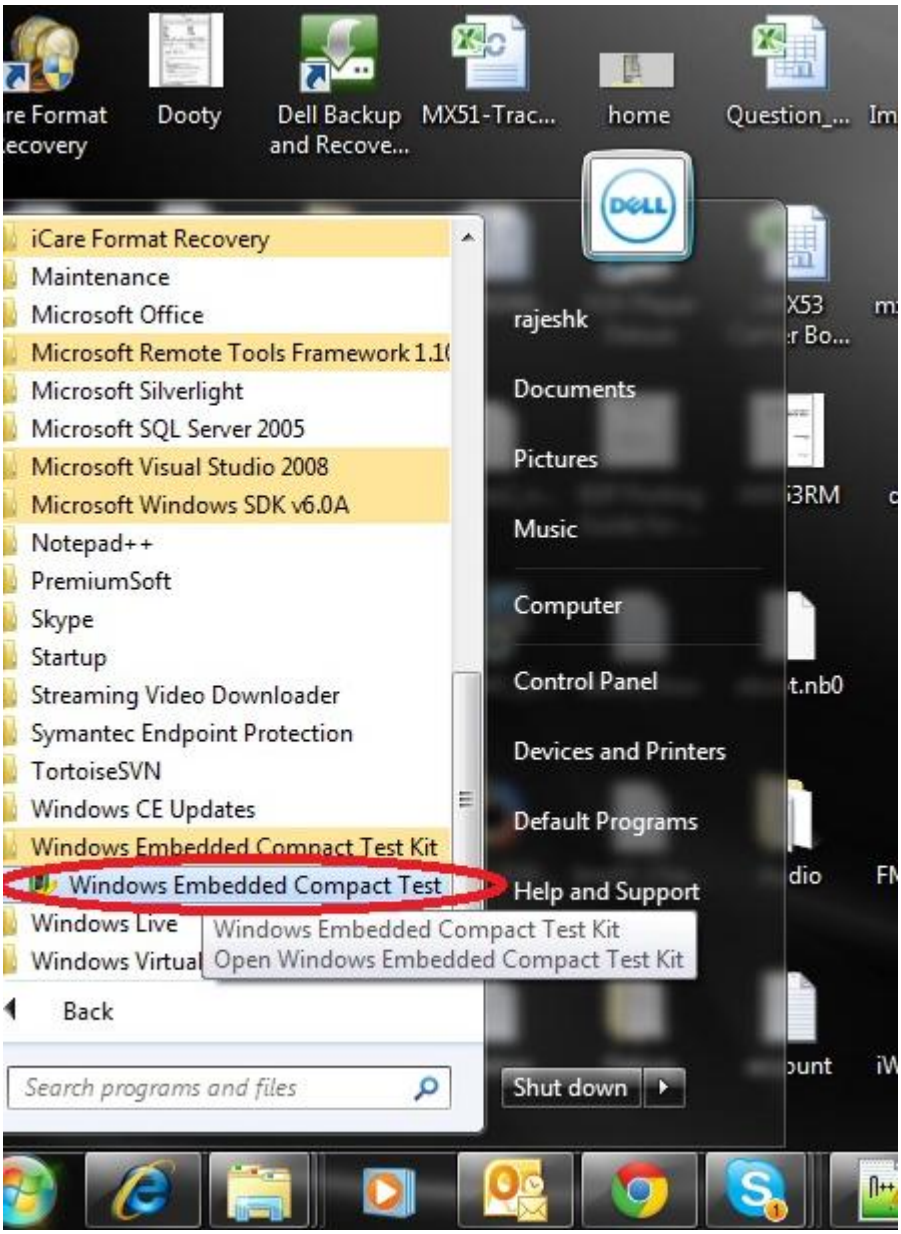

Figure 103: CETK set up

5) Following screen shot will appear on the host PC.

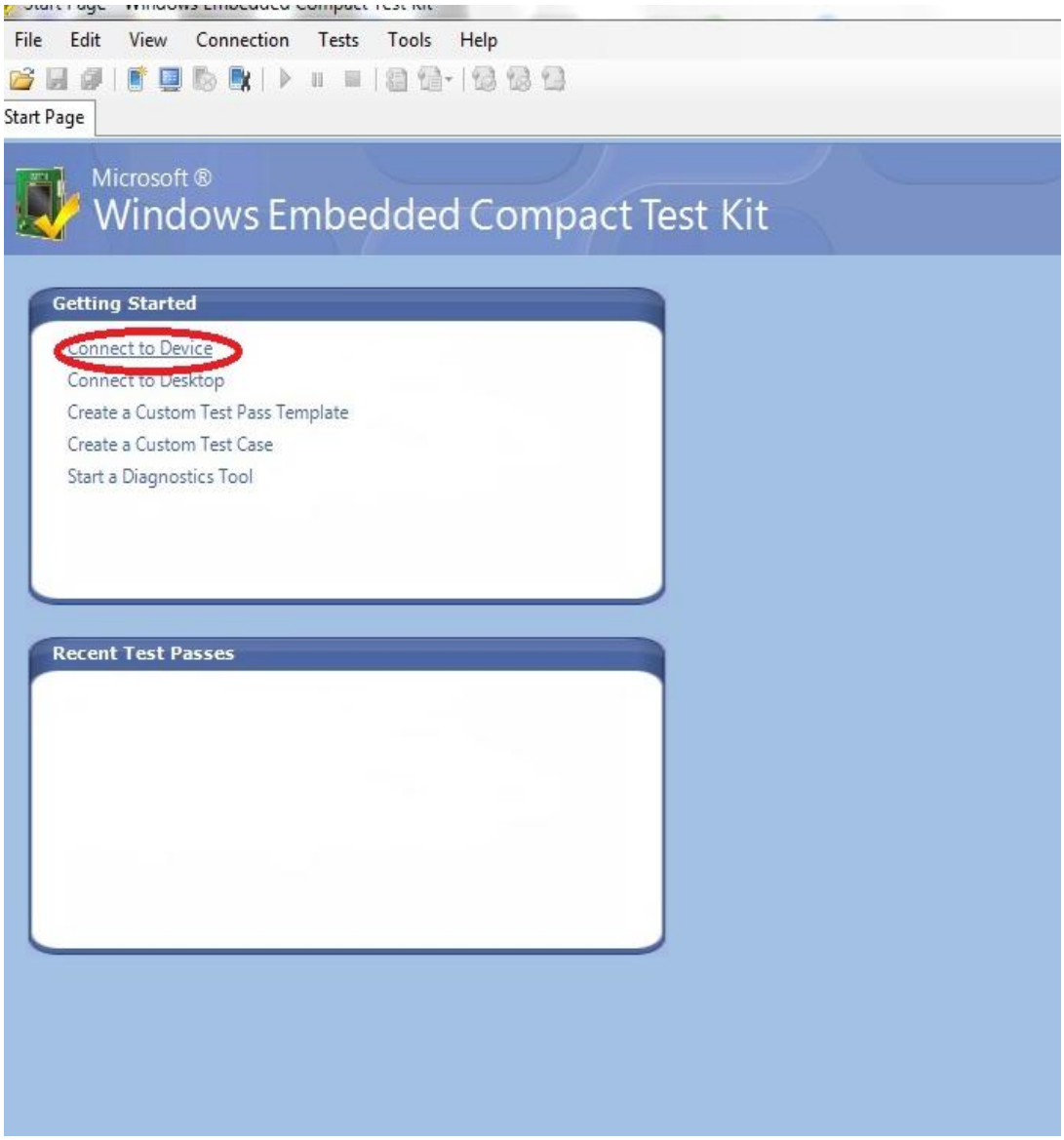

Figure 104: CETK connect to device

6) Select Connect to Device option. Following screen will appear. Select Windows Mobile 5.0 Smartphone Device R2 as a device name.

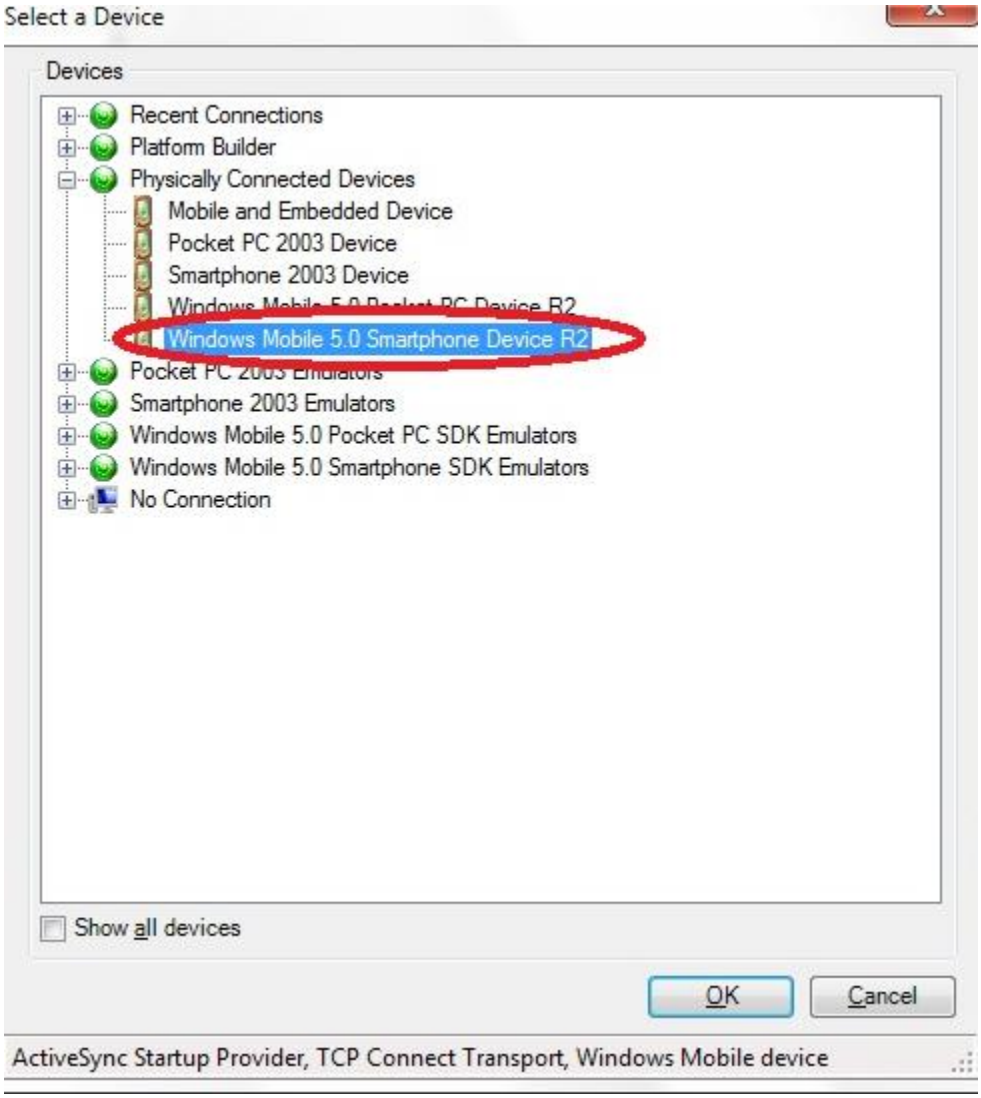

Figure 105: Select the device to get connected

7) Following screen will appear when “OK” is pressed.

Figure 106: Waiting for the connection

8) Once the connection is established the following screen will appear.

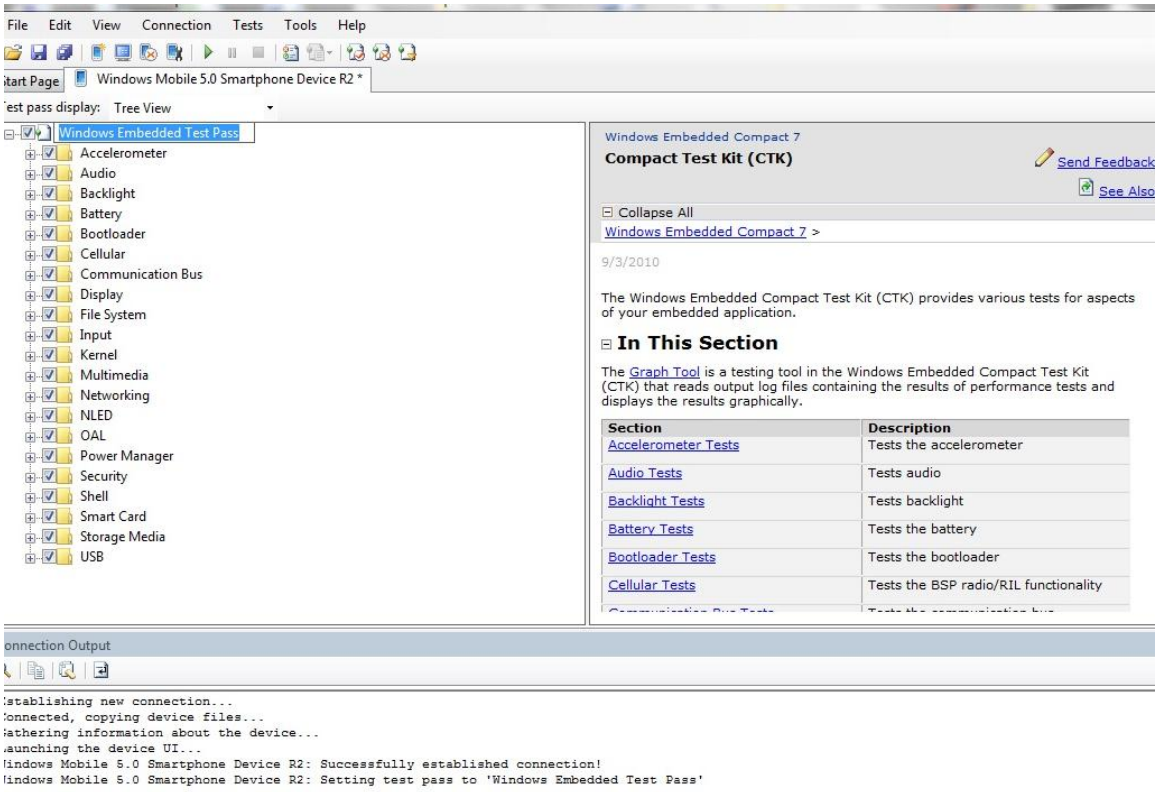

Figure 107: CETK test setup page

9) Now go to “File”, select “Open” and select “Test pass Template” and open the iWave given “iWave_G15_CETK” test pass as shown below.

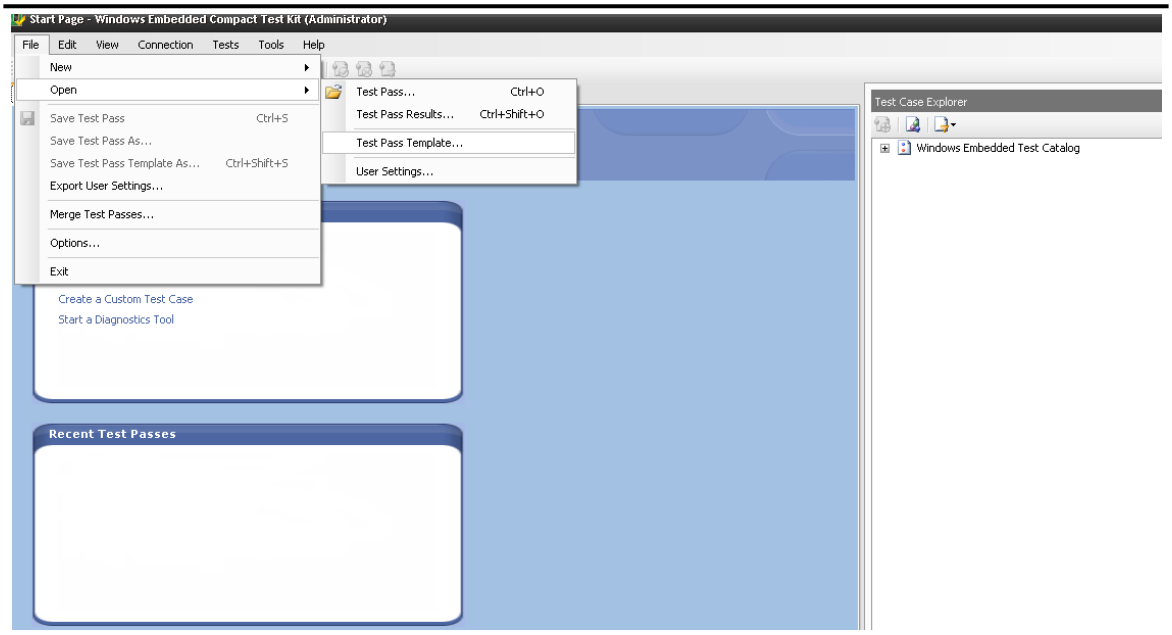

Figure 108: CETK open test pass template

10) Once the previous step is over, check the right side window for "Test Pass Templates View" tab. If it is present then click that and go to next step. If that tab is not there then click on "View" menu option and select "Test Pass Templates View" as follows.

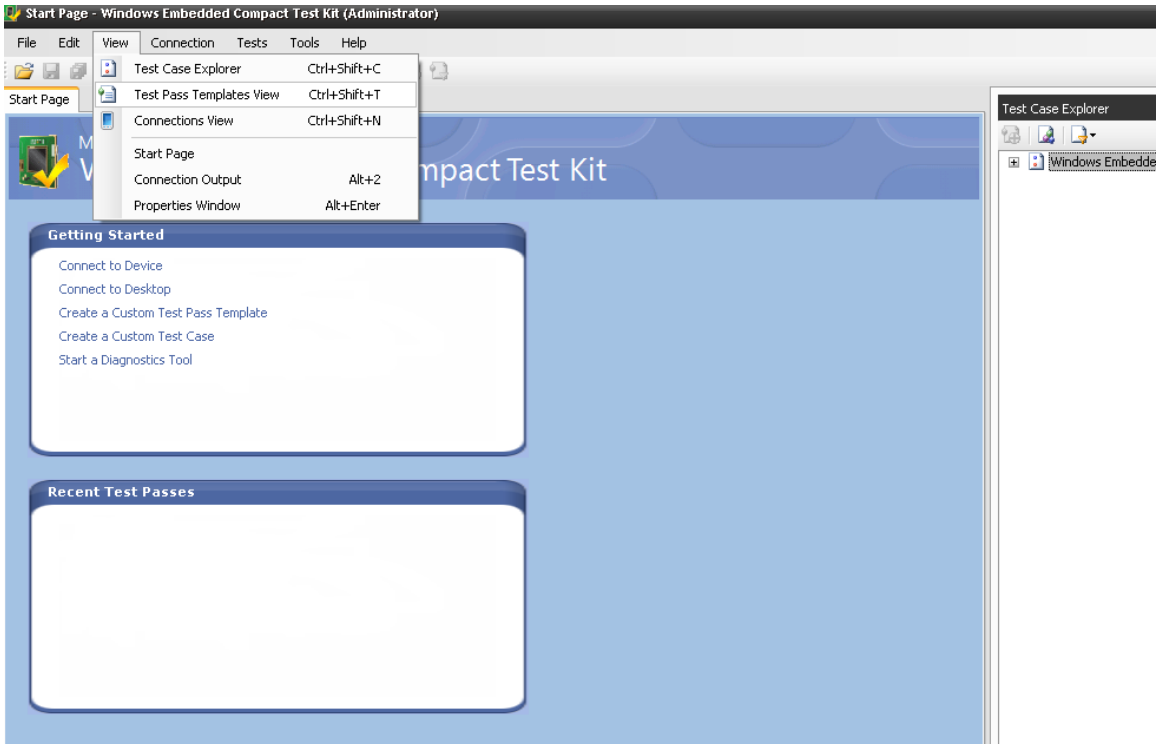

Figure 109: Opening test pass template (contd)

11) Now select “My Templates” in “Test Pass Templates View” tab and there one can fine the iWave_G15_CETK.tpt file selected.

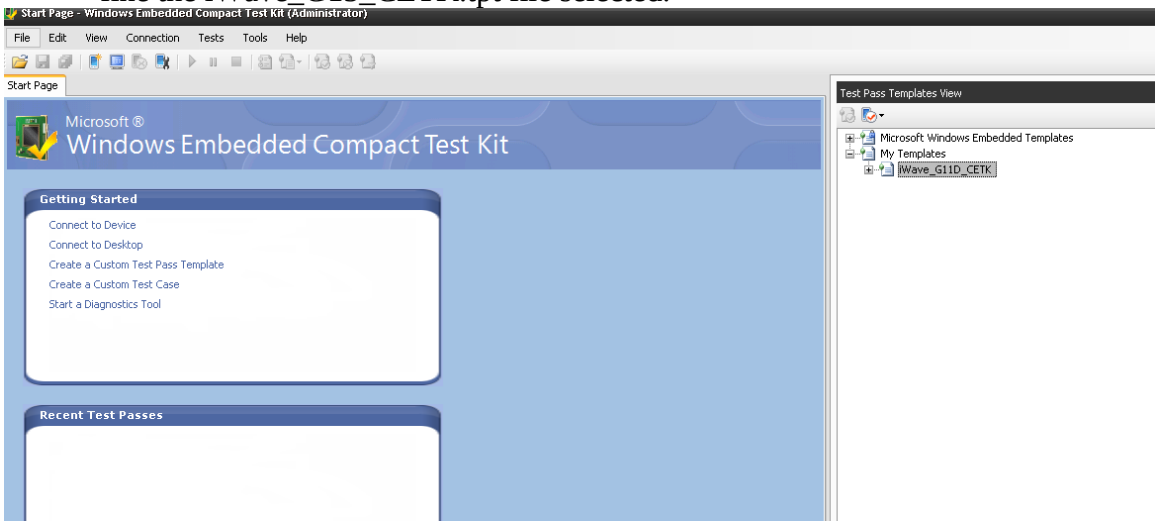

Figure 110: Selecting iWave_G15_CETK template

12) Now right click on the iWave_G15_CETK.tpt and select Use as current test pass option as follows.

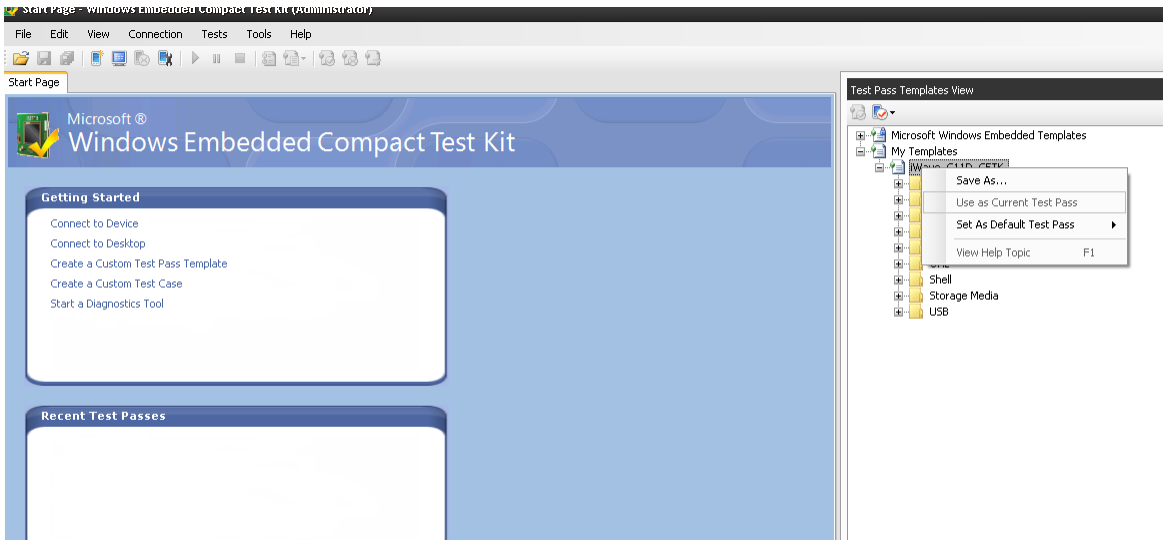

Figure 111:Running the template

13) Now select “Run Test Pass”. It will start executing the tests in a row. It may take several hours of time.

14) Or else user can select the basic CETK Testing using the above procedure.

15) The result of the tests that we performed has been attached here.

No	Module	Test Name	No of test cases	Test result	MSDN LINK
1	Audio	Audio Drift Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154549.aspx
2	Audio	Audio Loop Back Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154618.aspx
3	Audio	Full-duplex Audio Playback and Record Verification	11	Pass	http://msdn.microsoft.com/en-us/library/gg154978.aspx
4	Audio	Full-duplex Audio Playback Verification	14	Pass	http://msdn.microsoft.com/en-us/library/gg154592.aspx
5	Audio	Half-duplex Audio Playback and Record Verification	11	Pass	http://msdn.microsoft.com/en-us/library/gg154926.
6	CE Database	CE Database Build Verification Test	3	Pass	http://msdn.microsoft.com/en-us/library/gg154496.aspx
7	CE Database	CE Database Extended Performance Test	5	Pass	http://msdn.microsoft.com/en-us/library/gg154495.aspx
8	CE Database	CE Database Performance Test	5	Pass	http://msdn.microsoft.com/en-us/library/gg154942.aspx
9	CE Database	EDB Build Verification Test	3	Pass	http://msdn.microsoft.com/en-us/library/gg154942.aspx
10	Registry	Registry API and Functionality Test	40	Pass	http://msdn.microsoft.com/en-us/library/gg154501.aspx
11	Registry	Registry Performance Test	6	Pass	http://msdn.microsoft.com/en-us/library/gg154459.aspx
12	USB/keyboard /input	English Key map	1	Pass	http://msdn.microsoft.com/en-us/library/gg155168.aspx
13	USB/Mouse/Input	Mouse Verfication Test	11	Pass	http://msdn.microsoft.com/en-us/library/gg155136.aspx
14	Touch/inp	Calibration Abort Test	1	Pass	http://msdn.microsoft.com/en-

	ut				us/library/gg154921.aspx
15	Touch/input	Calibration Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg155109.aspx
16	Touch/input	Drawing Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154558.aspx
17	Touch/input	Null Parameter Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154645.aspx
18	Touch/input	Pen Up and Down Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154610.aspx
19	Touch/input	Point Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154958.aspx
20	Touch/input	Query Device Caps Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154983.aspx
21	Touch/input	Power Capabilities Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg155172.aspx
22	Touch/input	Read Calibration Point Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg155121.aspx
23	Touch/input	Set Sample Rate Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154845.aspx
24	Touch/input	Touch BVT Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154563.aspx
25	Touch/input	Touch Driver Unloaded Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154953.aspx
26	Touch/input	Touch Panel APIs, Functional, Power Management, and Fault Injection Tests	1	Pass	http://msdn.microsoft.com/en-us/library/gg154650.aspx
27	Kernel	Kernel BVT Test	5	Pass	http://msdn.microsoft.com/en-us/library/gg154816.aspx
28	Kernel	Kernel Scheduler Test	2	Pass	http://msdn.microsoft.com/en-us/library/gg154473.aspx
29	Kernel	Notification Test	9	Pass	http://msdn.microsoft.com/en-us/library/gg154971.aspx
30	Networking/Ethernet	Internet Control Message Protocol API Test	42	Pass	http://msdn.microsoft.com/en-us/library/gg154810.aspx
31	Networking/Ethernet	NDIS 6 Performance Test	1	Pass	http://msdn.microsoft.com/en-us/library/gg154989.aspx
32	Networking/Ethernet	Winsock 2.0 Test v4 and v6	8	Pass	http://msdn.microsoft.com/en-us/library/gg154542.aspx
33	Networking/Ethernet	Winsock Stress Test - Name Resolution	1	Pass	http://msdn.microsoft.com/en-us/library/gg155163.aspx

34	Networking/Ethernet	Winsock Stress Test - OpenClose	1	Pass	http://msdn.microsoft.com/en-us/library/gg154839.aspx
35	Networking/Ethernet	Winsock Stress Test - ReceiveSend	1	Pass	http://msdn.microsoft.com/en-us/library/gg154613.aspx
36	Networking/Ethernet	Winsock Stress Test - Socket Binding	1	Pass	http://msdn.microsoft.com/en-us/library/gg154667.aspx
37	OAL/Cache	OAL - No Cache Tests	11	Pass	http://msdn.microsoft.com/en-us/library/gg154590.aspx
38	OAL/Cache	OAL Cache Churn Test	5	Pass	http://msdn.microsoft.com/en-us/library/gg154808.aspx
39	OAL/Cache	Write-back Cache Mode Tests	11	Pass	http://msdn.microsoft.com/en-us/library/gg155130.aspx
40	OAL/Cache	Write-through Cache Mode Tests	11	Pass	http://msdn.microsoft.com/en-us/library/gg154968.aspx
41	OAL/Interrupt	OAL Kernel Mode Interrupt Tests	33	Pass	http://msdn.microsoft.com/en-us/library/gg154680.aspx
42	OAL/Interrupt	OAL User Mode Interrupt Tests	18	Pass	http://msdn.microsoft.com/en-us/library/gg154881.aspx
43	OAL/IOCTL	IOCTL_HAL_GET_DEVICE_INFO Test	12	Pass	http://msdn.microsoft.com/en-us/library/gg154556.aspx
44	OAL/IOCTL	IOCTL_HAL_GET_RANDOM_SEED Test	3	Pass	http://msdn.microsoft.com/en-us/library/gg154571.aspx
45	OAL/IOCTL	IOCTL_HAL_GET_WAKE_SOURCE Test	3	Pass	http://msdn.microsoft.com/en-us/library/gg154820.aspx
46	OAL/IOCTL	IOCTL_HAL_ILTIMING (Kernel Mode) Test	5	Pass	http://msdn.microsoft.com/en-us/library/gg154643.aspx
47	OAL/IOCTL	IOCTL_PROCESSOR_INFORMATION Test	5	Pass	http://msdn.microsoft.com/en-us/library/gg154869.aspx
48	OAL/Timer	Compare All Three Timers Drift - Busy Sleep and OS Sleep	4	Pass	http://msdn.microsoft.com/en-us/library/gg154483.aspx
49	OAL/Timer	Compare All Three Timers Drift Test - Periodic and Random OEMIdle	2	Pass	http://msdn.microsoft.com/en-us/library/gg154606.aspx
50	OAL/Timer	OAL High Performance Timer Tests	3	Pass	http://msdn.microsoft.com/en-us/library/gg154476.aspx
51	OAL/Timer	OAL Timer GetTickCount Tests	4	Pass	http://msdn.microsoft.com/en-us/library/gg154891.aspx
52	OAL/Timer	Wall Clock Timer Tests	3	Pass	http://msdn.microsoft.com/en-us/library/gg154802.aspx
53	Shell/Silv	Applications Load -	1	Pass	http://msdn.microsoft.com/en-

	erLight	Browser			us/library/gg155065.aspx
54	Shell/SilverLight	Applications Load - Music Player	1	Pass	http://msdn.microsoft.com/en-us/library/gg154653.aspx
55	Shell/SilverLight	Applications Load - Picture Viewer	1	Pass	http://msdn.microsoft.com/en-us/library/gg154901.aspx
56	Shell/SilverLight	Applications Load - Sample Home Screen	1	Pass	http://msdn.microsoft.com/en-us/library/gg154938.aspx
57	Shell/SilverLight	Applications Load - Video Player	1	Pass	http://msdn.microsoft.com/en-us/library/gg154482.aspx
58	Shell/SilverLight	Background Animation	3	Pass	http://msdn.microsoft.com/en-us/library/gg154462.aspx
59	Shell/SilverLight	Image Manipulation	10	Pass	http://msdn.microsoft.com/en-us/library/gg154551.aspx
60	Shell/SilverLight	List Performance Tests	9	Pass	http://msdn.microsoft.com/en-us/library/gg154596.aspx
61	Shell/SilverLight	Screen Transition	6	Pass	http://msdn.microsoft.com/en-us/library/gg154641.aspx
62	Strorage Media/SD Card	File System Driver Test for SD Card	44	Pass	http://msdn.microsoft.com/en-us/library/gg155106.aspx
63	Strorage Media/SD Card	File System Performance Tests for SD Card	31	Pass	http://msdn.microsoft.com/en-us/library/gg154471.aspx
64	Strorage Media/SD Card	Storage Block Driver API Verification Tests for SD Card	26	Pass	http://msdn.microsoft.com/en-us/library/gg154814.aspx
65	Strorage Media/SD Card	Storage Block Driver Performance Test for SD Card	2	Pass	http://msdn.microsoft.com/en-us/library/gg154944.aspx
66	Strorage Media/SD Card	Storage Block Driver ReadWrite Test for SD Card	9	Pass	http://msdn.microsoft.com/en-us/library/gg154573.aspx
67	Strorage Media/USB Storage	File System Performance Test for USB devices	31	Pass	http://msdn.microsoft.com/en-us/library/gg154570.aspx
68	Strorage Media/USB Storage	Storage Device Block Driver API Test for USB Device	26	Pass	http://msdn.microsoft.com/en-us/library/gg154863.aspx
69	Strorage Media/USB Storage	Storage Device Block Driver Benchmark Test for USB Device	9	Pass	http://msdn.microsoft.com/en-us/library/gg154595.aspx
70	Strorage Media/USB Storage	Storage Device Block Driver Performance Test for USB Storage	2	Pass	http://msdn.microsoft.com/en-us/library/gg154874.aspx
71	Strorage	Storage Device Block	10	Pass	http://msdn.microsoft.com/en-

	Media/USB Storage	Driver ReadWrite Tests for USB Device			us/library/gg154837.aspx
72	Strorage Media/USB Storage	Storage Device File System Driver Test for USB Device	44	Pass	http://msdn.microsoft.com/en-us/library/gg154911.aspx
73	USB/Function	USB Function Driver Verification Tests	7	Pass	http://msdn.microsoft.com/en-us/library/gg154876.aspx
74	USB/Host	USB Host Driver Verification Tests	12	Pass	http://msdn.microsoft.com/en-us/library/gg154522.aspx
75	USB/OTG	USB OTG Bus IOCTL Test	5	Pass	http://msdn.microsoft.com/en-us/library/gg155112.aspx

5.7. SDK Installation

1) Copy the iWave given **IWave_IMX6Q_SDK** MSI file from the path **Deliverables\Software\SDK\IWave_IMX6Q_SDK.msi**

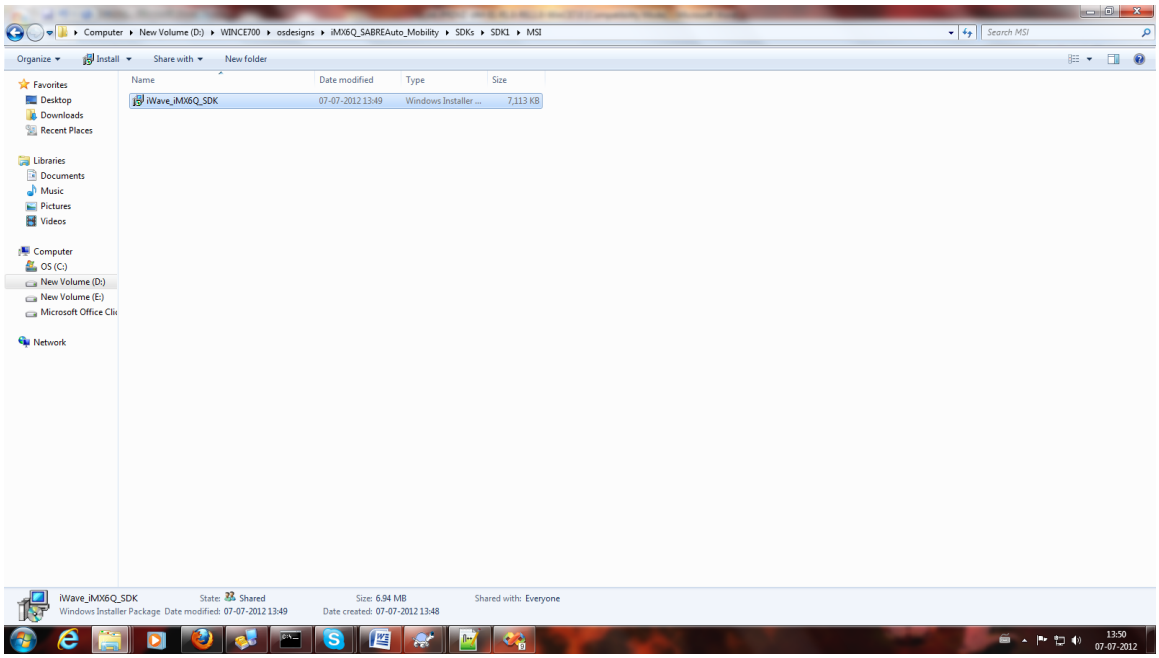

Figure 112: Folder with i.MX6 SDK

2) Double click on SDK **MSI** file. Following screens will appear in the PC.

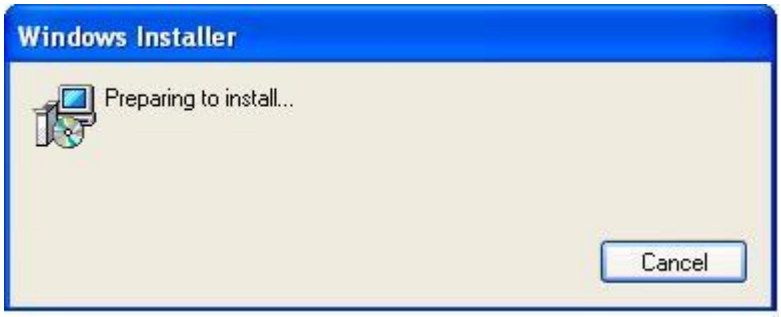

Figure 113: Installation of SDK

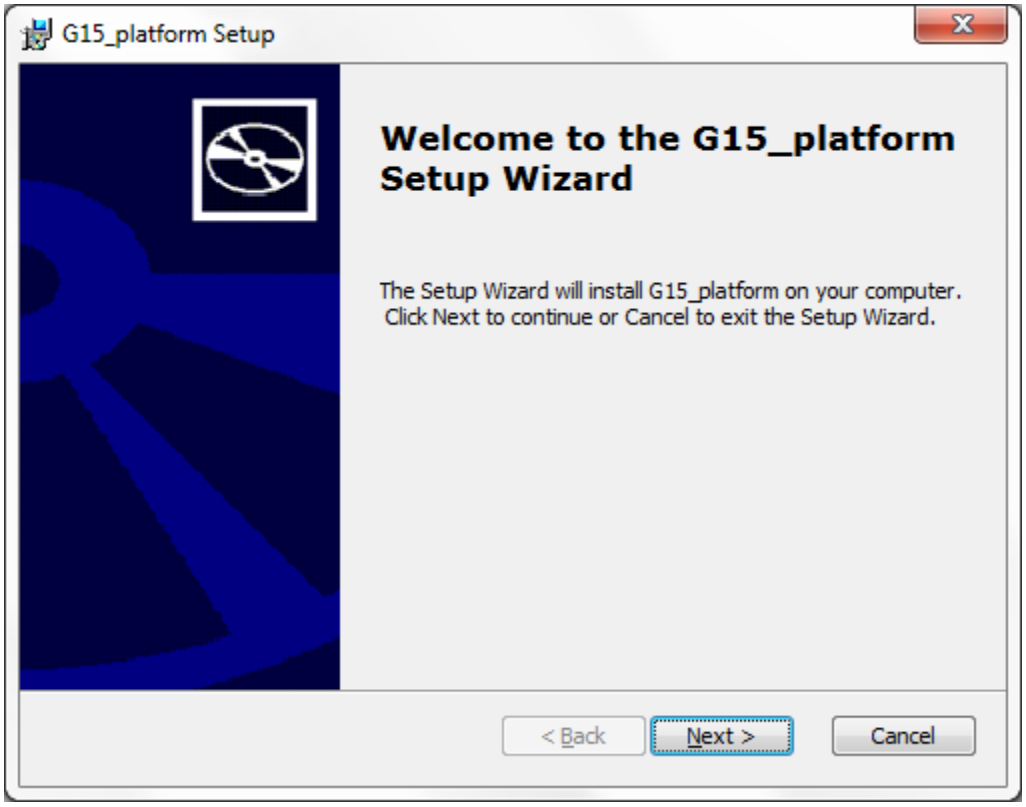
G15_platform Setup
Welcome to the G15_platform Setup Wizard
The Setup Wizard will install G15_platform on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
< Back
Next >
Cancel

Figure 114: SDK installation contd

3) Click "**Next**".

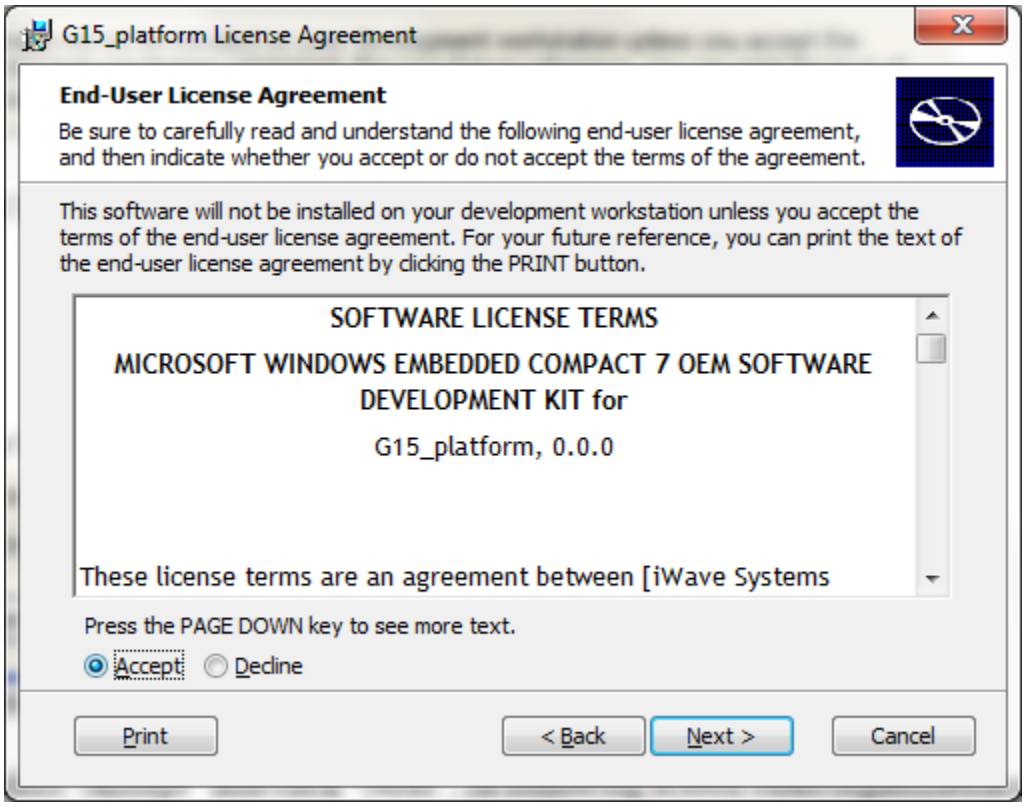
G15_platform License Agreement
End-User License Agreement
Be sure to carefully read and understand the following end-user license agreement, and then indicate whether you accept or do not accept the terms of the agreement.
This software will not be installed on your development workstation unless you accept the terms of the end-user license agreement. For your future reference, you can print the text of the end-user license agreement by clicking the PRINT button.
SOFTWARE LICENSE TERMS
MICROSOFT WINDOWS EMBEDDED COMPACT 7 OEM SOFTWARE DEVELOPMENT KIT for
G15_platform, 0.0.0
These license terms are an agreement between [iWave Systems
Press the PAGE DOWN key to see more text.
Accept
Decline
Print
< Back
Next >
Cancel

Figure 115: SDK installation contd

4) Select “Accept” and click “Next”. In following screen enter organization name and click “Next”.

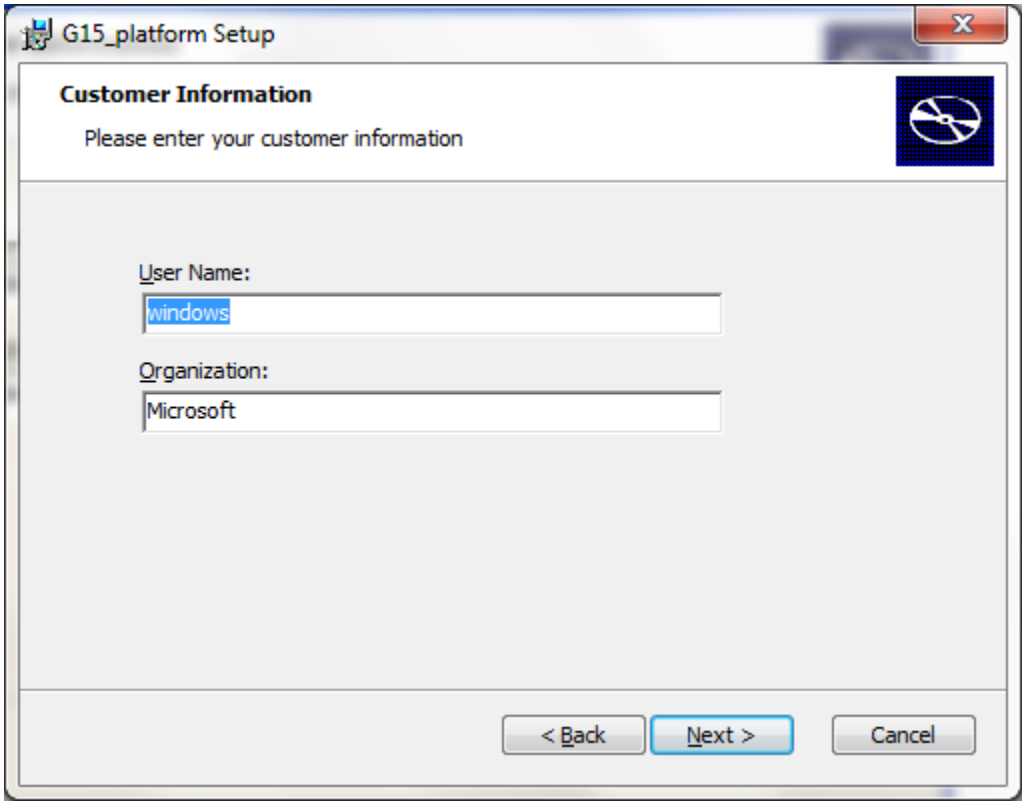

Figure 116: Selecting User name in installation

5) Following screen appears when clicked “Next”.

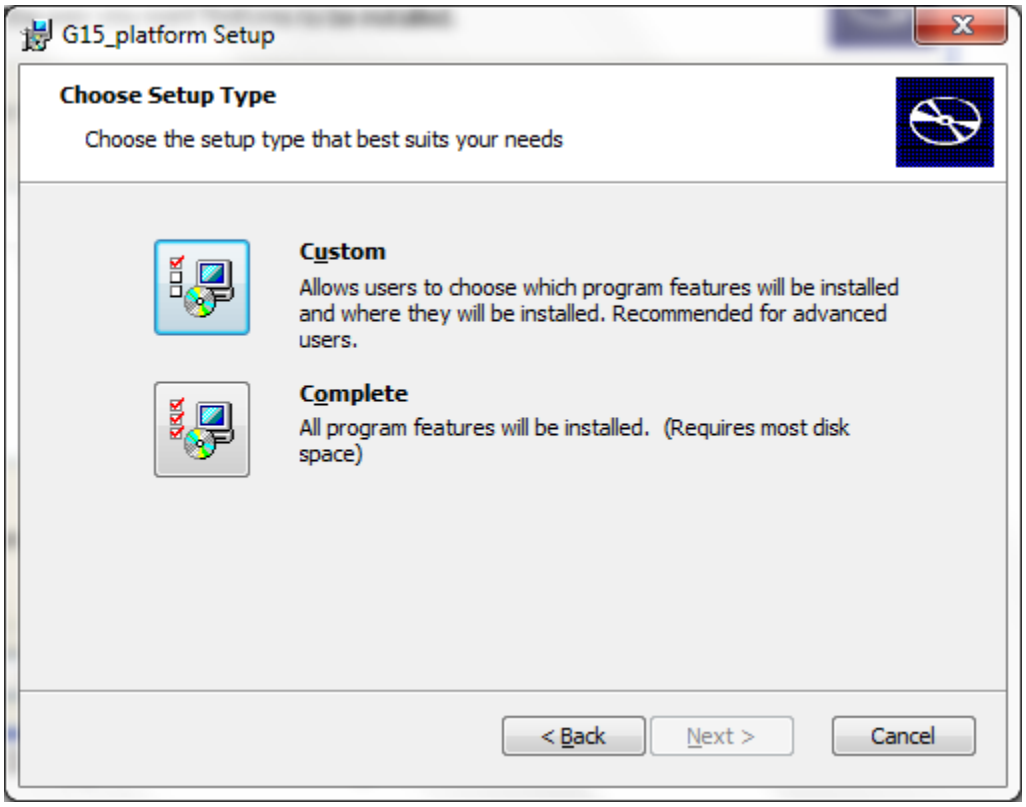
G15_platform Setup
Choose Setup Type
Choose the setup type that best suits your needs
Custom
Allows users to choose which program features will be installed and where they will be installed. Recommended for advanced users.
Complete
All program features will be installed. (Requires most disk space)
< Back
Next >
Cancel

Figure 117: SDK installation contd

6) Click “Next”.

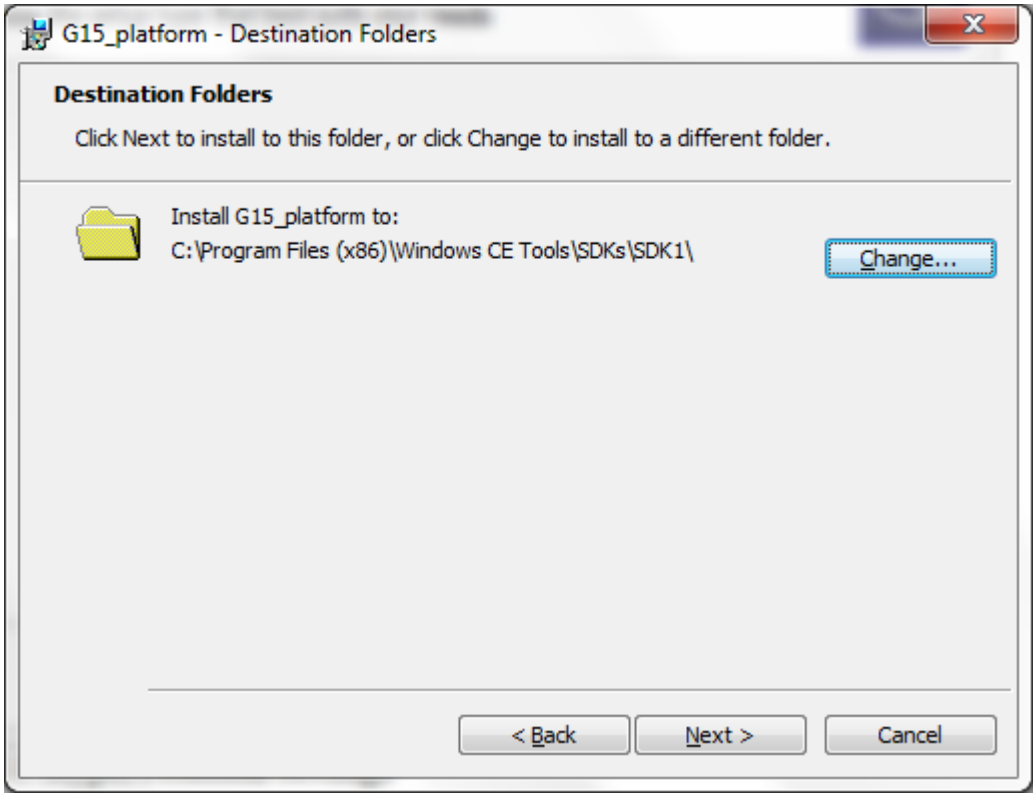
G15_platform - Destination Folders
Destination Folders
Click Next to install to this folder, or click Change to install to a different folder.
Install G15_platform to:
C:\Program Files (x86)\Windows CE Tools\SDKs\SDK1\
Change...
< Back
Next >
Cancel

Figure 118: Destination folder selection

7) Click “Install”. Following screen will appear.

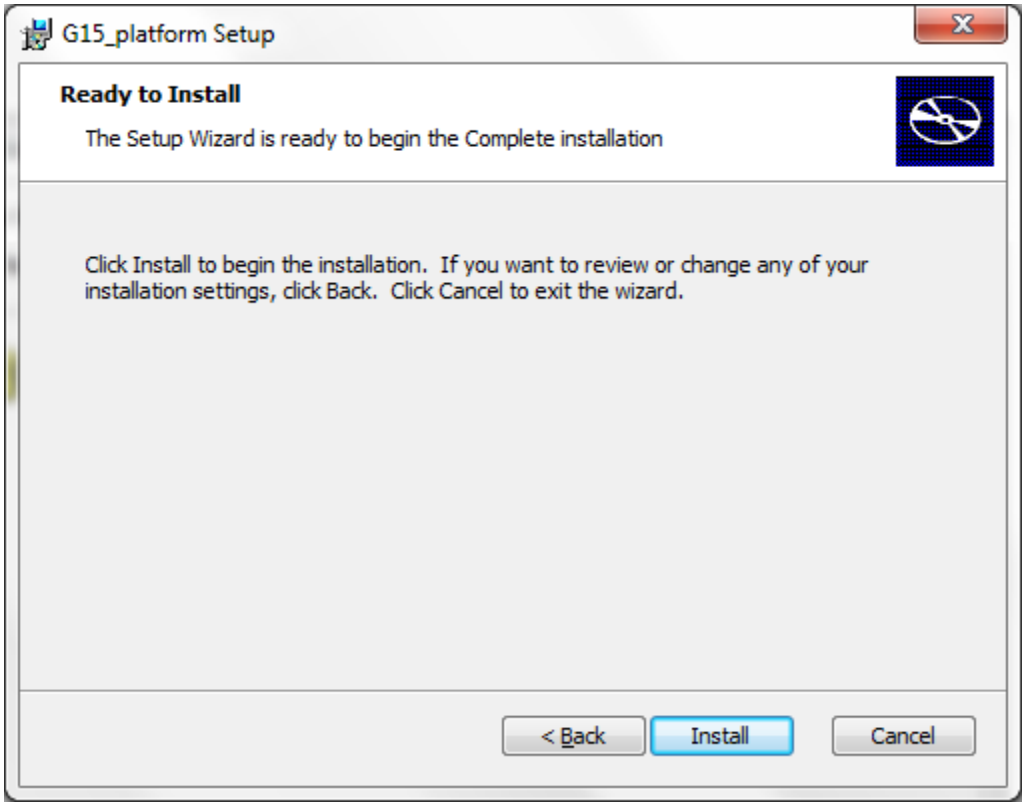
G15_platform Setup
Ready to Install
The Setup Wizard is ready to begin the Complete installation
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
< Back
Install
Cancel

Figure 119: Ready to install window

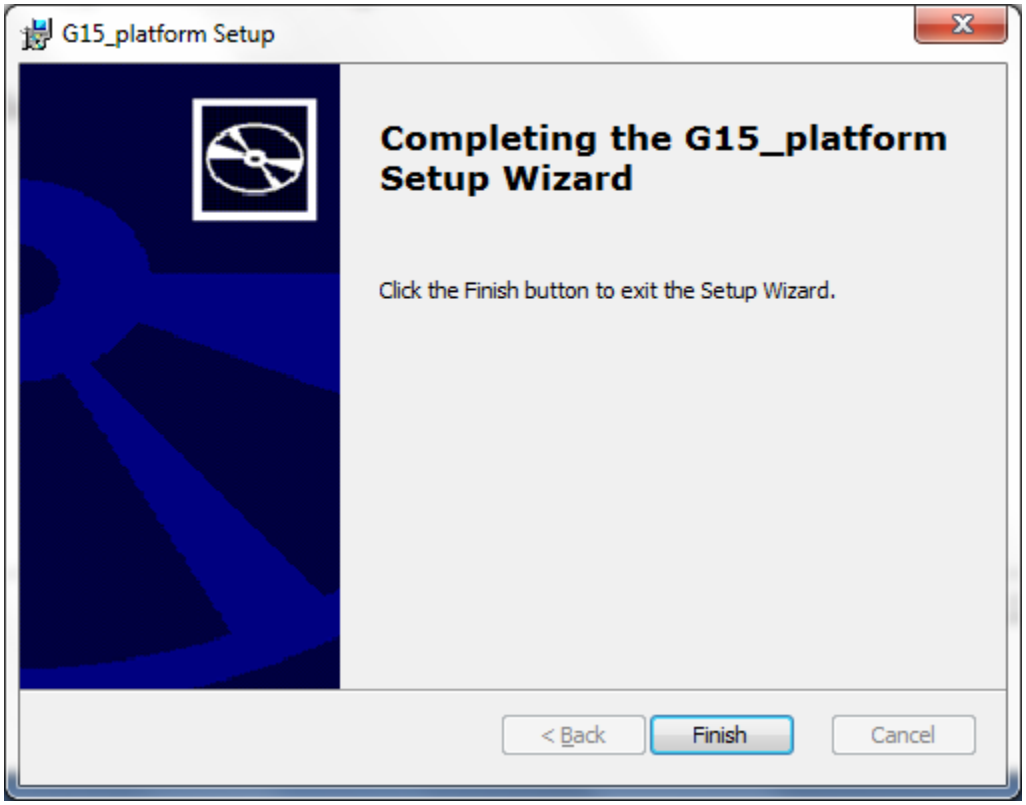

Figure 120: Completing the installation

8) Click “Finish” to complete the installation.

6. Technical Support

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